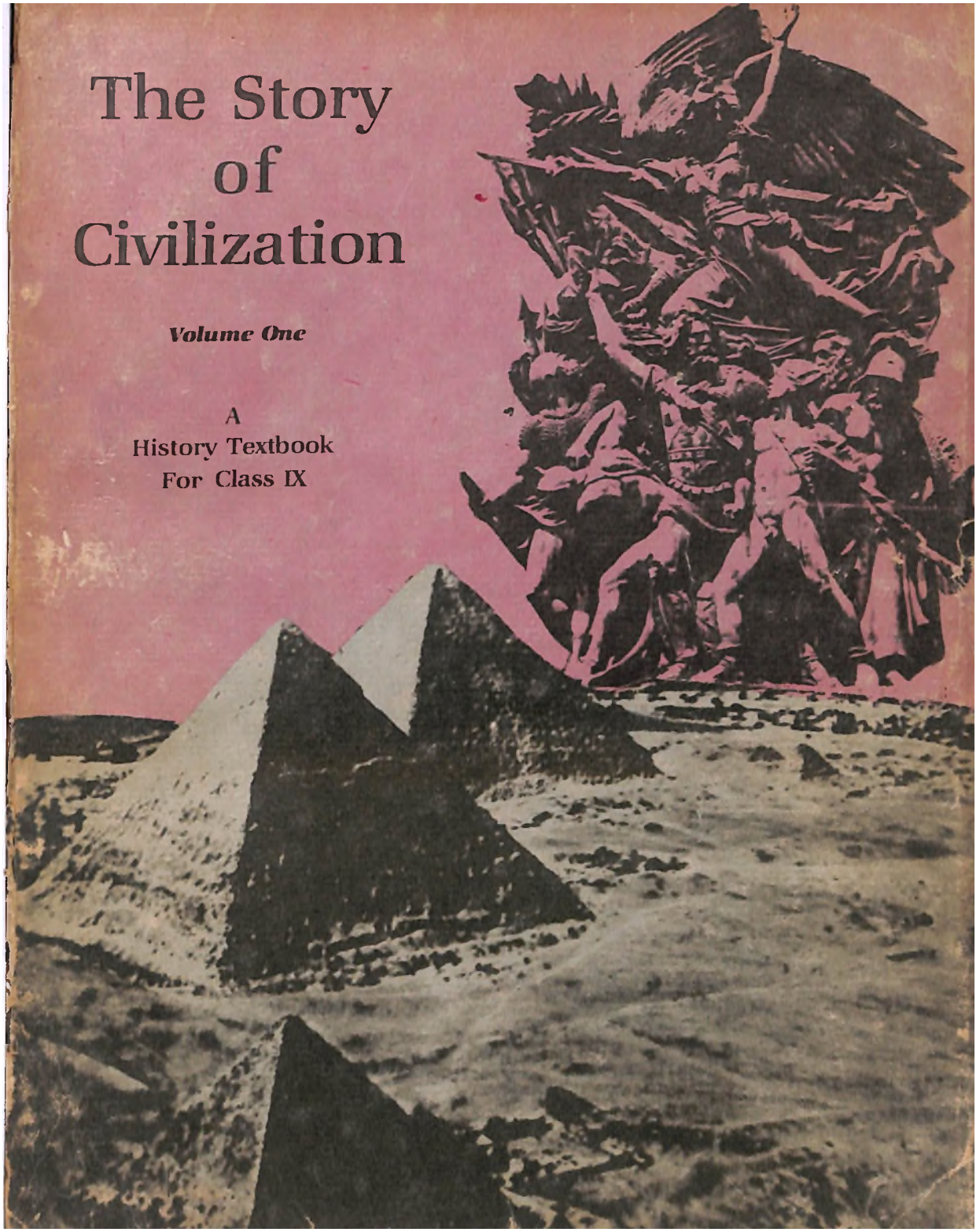
The Story of Civilization

Volume One

A
History Textbook
For Class IX



THE STORY OF CIVILIZATION

Volume I

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Volume I

A History Textbook for Class IX

Arjun Dev

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

First Edition
May 1989
Vaisakha 1911

Reprinted
January 1990
Magha 1910

November 1990
Kartika 1912

P.D. 125T-MB

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A Note on the Cover

The front cover, on the left, shows the pyramids in Egypt which are among the most magnificent remains of one of the earliest civilizations. On the right is Francois Rude's relief sculpture called *Departure of the Volunteers of 1972 (The Marseillaise)* on the Arch of Triumph in Paris. The relief depicts a group of volunteers marching to the defence of the French Republic and the French Revolution which were threatened by foreign intervention. The top figure in the relief is the goddess of war inspiring the volunteers with the singing of the French revolutionary song *The Marseillaise*.

The back cover shows the sculpture of Gautama the Budha from Sarnath. On its right, a lithograph depicts a scene from the Revolution, of 1848 in Berlin.

Rs. 16.50

Published at the Publication Department by the Secretary, National Council of Educational Research and Training, Sri Aurobindo Marg, New Delhi 110 016 and printed at Rajendra Ravindra Printers (Pvt.) Ltd., Ram Nagar, New Delhi 110 055.

Foreword

Reorienting the content and process of education is of crucial importance in the implementation of the National policy on Education-1986. As a step in this direction, the NCERT has brought out a framework for national curriculum for primary and secondary schools and syllabus guidelines and detailed syllabi in various subjects for various stages of school education. New textbooks and other instructional materials are being brought out in a phased manner.

History is introduced as a separate subject as a part of the social sciences from Class VI onwards. During the five years of upper primary and secondary stage (Classes VI-X), the child is introduced to a systematic study, appropriate to the school stage, of Indian history and of other civilizations from the earliest times to the modern. The primary aim of teaching history at these stages is to develop an appreciation of both the national heritage and the total human heritage. Within this broad framework, the course in Indian history is introduced at the upper primary stage and that in other civilizations at the secondary stage.

The present course for Classes IX and X consists of a broad survey of the history of the world, with its focus on important stages in the growth of civilizations and on scientific and cultural development. The emphasis is on the aspects of change and development, and on the contributions of different peoples and cultures to the heritage of mankind. An attempt has also been made to focus on certain aspects of modern Indian hisotry, particularly on India's struggle for freedom, that have a close bearing on contemporary India. The details of political history, particularly dynastic history, have been reduced to the minimum, though some attention has been paid to the growth of political systems and their diversities. Many important developments and many cultures and civilizations have had to be left out owing to the limitations imposed by the time allotted to the teaching of the subject. However, in spite of these limitations, an attempt has been made to deal with the main course of human history in its aspects of unity and diversity, continuity and change. It is hoped that these volumes will deepen the pupils' understanding of the world and develop in them ideas and attitudes which are imperative for national and international development and will help them to appreciate that the world of man is indivisible.

The course for Classes IX and X is being covered in two volumes. The present volume covers the period from the prehistoric times to about the end of the nineteenth century.

The NCERT is grateful to Professor Arjun Dev, who has prepared this volume, and to his colleagues, particularly Ms Indira Arjun Dev, for their help at various stages in the preparation and finalization of this book. An earlier version of this book was reviewed

with the help of a number of experts at a workshop held at the Centre for Studies in Social Sciences, Calcutta. We are grateful to the experts for their help and to the Centre which not only provided the venue for the workshop but also, and more importantly, made available to us the expertise in the history of different regions of the world. We are grateful to Dr. Qamaruddin for his help in reviewing the exercises and to Shri R.P. Pathak for assisting in the finalization of the manuscript. The NCERT is also grateful to the institutions, agencies and individuals who have provided illustrations included in this volume.

The NCERT will be grateful for any comments, criticisms and suggestions from readers on any aspect of the present volume.

P.L. Malhotra
Director
National Council of Educational Research and Training

New Delhi

Acknowledgements

The preparation of this volume has been made possible owing to the help of a number of individuals and institutions. Our thanks are due particularly to the following : The panels headed by the late Professor B. Ghosh and Professor Satish Chandra, under whose guidance the earlier versions of this volume were prepared; Shri B.M. Pande of the Archaeological Survey of India for his help in preparing the text on ancient Iran and pre-Columbian Americas, and Dr. Anirudha Gupta of the Jawaharlal Nehru University for his help in preparing the text on pre-colonial Africa; Dr G.L. Adhya, the late Dr. S.K. Saini, Professor S.H. Khan and Dr Qamaruddin for their help in preparing an earlier version of this volume; Miss Nirmal Bajaj, Shri S.S. Saar, Shri A.K. Ghose, Shri Jassu Ram and Miss Ranjana Vajpai for the maps; Shri C.K. Vajpai, Shri K.C. Wagh, Shri B. Ashok and Shri G.K. Virmani for illustrations; the Archaeological Survey of India and many embassies in India, especially the American Center and the Cultural Section of the French Embassy, for making available to us many photographs; and Ms Indira Arjun Dev for her help at every stage and in every aspect of the preparation and finalization of this volume.

An eight-page supplement has been added at the end of this book to mark the bicentenary of the French Revolution

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GANDHIJI'S TALISMAN

"I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test :

Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it ? Will it restore him to a control over his own life and destiny ? In other words, will it lead to Swaraj for the hungry and spiritually starving millions ?

Then you will find your doubts and your self melting away."

MKGandhi

Contents

Chapter 1 **Life in Prehistoric Times** **1—21**

Archaeology and Prehistory—Life Begins on Earth—Evolution of Man—The Palaeolithic Age—The Neolithic Age

Chapter 2 **Bronze Age Civilizations** **22—47**

The Harappan Culture—The Mesopotamian Civilization—The Egyptian Civilization—The Chinese Civilization

Chapter 3 **Early Iron Age Civilizations** **48—101**

Ancient Indian Civilization—The Civilization of Ancient China—The Iranian Civilization—The Greek Civilization—The Roman Civilization—Judaism and Christianity

Chapter 4 **Early American and African Civilizations** **102—126**

Early American Civilizations : Early Cultures—The Mava Civilization—The Aztecs—The Incas Early African Cultures and Civilizations : The People of Africa—From Old Stone Age to the Beginning of Iron Age—Kingdom of Kush—Kingdoms of Nubia and Aksum—The Sudanic Kingdoms—Civilizations of the Bantu Peoples—Kingdom of Kongo—The Lunda Empire—The Kingdom of Mwenemutepa—Coastal Regions of East Africa

Chapter 5 **The Medieval World** **127—161**

Medieval Europe—Feudal System in Europe—Trade and Commerce in Medieval Europe—Church in Medieval Europe—The Arab Civilization—India in Medieval Times—China and Japan in Medieval Times

Chapter 6 **Beginning of the Modern Age** **162—198**

Disintegration of the Feudal System—Renaissance—Humanism—Art and Architecture—Renaissance Literature—The Invention of Printing—Beginning of Modern Science—Reformation—Evils of the Catholic Church—Protests Against the Church—Martin Luther and Protestant Reformation—Political Factors—Spread of Protestant Reformation—Catholic Reformation—Conflicts in the Name of Religion—Explorations, Discovery, Trade—Great Explorations : 1492-1520—Trade and Colonization—Rise of Nation-States—The First Nation-States—Nation-States and National Rivalry—Accomplishments of Nation-States—Struggle Against Absolutism—The English Revolution

Chapter 7 **Capitalism and the Industrial Revolution** **199—213**

Rise of Capitalism—The Industrial Revolution—The Revolution Begins in England—Revolution in Agriculture—Spread of the Industrial Revolution—Competition in Trade and Rise of Imperialism—Consequences of Industrialization : From Village to City—Industrial Revolution and the First Industrial Workers—Efforts to Improve Working Conditions in Industry—Government Responsibility and Industrialization—The Rise of Socialism

Chapter 8 **Revolutionary and Nationalist Movements** **214—253**

The American Revolution—The French Revolution—Revolutions in America—Revolutionary Movements in Europe—Revolutions of 1848—Growth of Democracy in England—Unification of Germany—Unification of Italay—Socialist Movement

CHAPTER 1

Life in Prehistoric Times

THIS CHAPTER tells us the story of man from the days when he appeared on the earth to the time when he began to record events in writing. That part of the story of man's progress for which we have written records is known as history. But man had lived on this earth for several hundred thousand years before he learned the art or writing. This long, distant past when man kept no written records is called prehistory, or, as we often say, prehistoric times.

Little was known about prehistoric times until the last century when scholars began to dig up the places where prehistoric men lived. This digging brought to light old tools, pottery, habitats and bones of ancient men and animals. By piecing together the information obtained from these things, scholars have built up a fairly good record of what happened and how men lived in prehistoric times. It was no longer possible to believe, as even learned men in Europe believed till the 18th century, that man was created in the year 4004 B.C., that is, only six thousand years ago!

The story of man starts about three million years ago. About this time, early man, evolved from tree apes, began to learn to walk on two feet on the earth. Slowly, very slowly, his brain increased in size and improved in quality. It was not until thirty or forty thousand years ago, however, that *Homo sapiens* appeared. *Homo sapiens* or 'Wise Man' is the species to which the present day man belongs.

Man learned to join his fellow men and go in search of the fruits and game that nature provided. Over a period of several hundred thousand years, he learned to make tools of stone, use animal skins for clothes and build shelters. He also learned to make fire—and most important—he learned to speak. But he still lived by hunting, fishing and gathering the food that nature provided. This period in early man's development is commonly known as the Ols Stone Age or the *Palaeolithic age.*

The pace of human progress quickened only about 8000 B.C., or 10,000 years ago when man began to make a variety of fine tools. This period is known as the Middle Stone Age, also called the *Mesolithic Age*. Then, in Asia, and later in other parts of the world, man learned the art of growing his food. This was the beginning of agriculture. From a food-gatherer, man became a food-producer. The cultivation of crops brought about such great changes in man's life that it marks the beginning of a new age, the New Stone Age or the *Neolithic age*.

The body structure of man has changed little in the last 30,000 years with the appearance of *Homo sapiens*. But, there is another kind of change in his development that has never stopped to this day. That is the change in his *culture*. The term 'culture' is used to describe such things as how man earns his living, what kind of house he lives in, what skills he uses, what things he produces, how much knowledge he has acquired, how he lives with his fellow men, what he believes, how much leisure time he has and what he does with this time.

Man has never been satisfied with the way he lives. He has always struggled to make improvements. In this struggle which has been both long and painful, he has been successful. He has gone ahead to find easier, better ways of earning his living, to set up better ways of cooperating with his fellow men, to discover new knowledge to express his ideas in art and literature. To put all this in a few words, man's culture has been progressing. The cultures of groups of people that have become highly developed are often called *civilizations*.

Although man's culture has been advancing throughout the ages, the pace has not always been the same either in every period or in every part of the world. Thus, when we read that great progress was achieved in a particular period, we must not think that all cultures achieved that progress. Nor should we think that culture has progressed at a uniform rate. However, no cultures have continued completely unaffected by other cultures. In our time, the pace of development is faster than in any previous period in the life of man. And developments in one part of the globe now affect every other part very quickly.

We will see how one culture came to affect, and be affected by other cultures as we study other chapters in this book. We will also see that in a sense, every chapter is some part of the story of man's progress or his struggle for progress. The life of prehistoric man is only the first chapter in that story.

ARCHAEOLOGY AND PREHISTORY

What is Archaeology ?

Scholars who have made a science of digging up old sites in the form of mounds and ruins to shed light on the everyday lives and occupations of our ancestors in the remote past are *archaeologists*. *Archaeology*, The work of archaeologists, has made us familiar with several hundred thousand years of human progress. Excavations have brought to light a mass of objects. These include tools and weapons, monuments and relics, arts and crafts of ancient peoples, the homes in which they lived, the temples in which they worshipped and the setting in which they spent their lives. In short, archaeologists have supplied materials to historians for a full social and cultural history, the kind of history that could never have been written before.

Sometimes, discoveries of great cultures of the past have been made by accident. In 1856, for example, two brothers—James and William Burton—who were engaged in laying out the railway line from Karachi to Lahore, tried to get bricks for their line from the nearby mounds. This digging for bricks led to the discovery of two ancient cities, Harappa in West Punjab and Mohenjodaro in Sind. But it was not until 70 years later, with the labours of R.D. Banerji working under Sir John Marshall and N.G. Majumdar, that the facts about these 5000-year-old cities came to light. To archaeologists, then, we owe our knowledge of the civilizations of Mohenjodaro and Harappa in India, and of the Sumerians, the Babylonians, and the Assyrians in West Asia. Before the excavations were made, nobody even guessed that there had been a great civilization on the Mediterranean island of Crete. The whole history of ancient Egypt, to minute details of everyday life, has been revealed by archaeology. Archaeology has also enabled us to understand the life of man tens of thousands of years ago when he did not lead a settled life, used only crude stone tools, and co-operated with his fellow men only in the most elementary ways.

Methods of Archaeology

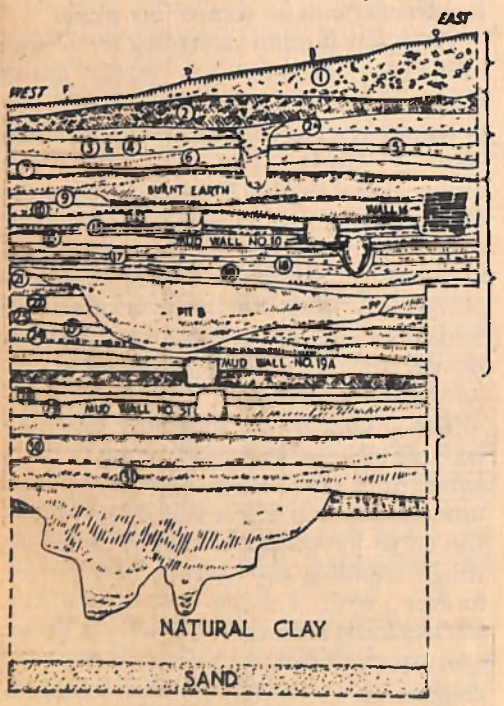
With the passage of time, many things which would help us to understand the cultures of early man are damaged or destroyed. But certain factors help in preserving articles which would otherwise decay in a short time. In the dry climate of Egypt, for example, wooden furniture and even grass mats and delicate cloth have been found intact inside the great pyramids. Wheat and barley in a desert granary had even the beards well preserved. The volcanic eruption which buried the ancient Roman city of Pompeii preserved bread in a baker's shop. Extreme cold is also an excellent preservative. In a pit full of snow, in Siberia, was discovered a prehistoric mammoth, almost completely intact.

Complete human skeletons, tools, pots and other artifacts are rarely found together at one place. A bone from a jaw or leg or a few teeth are almost all that one usually finds. The clay pots an archaeologist digs up in great quantity are found in fragments. To get a picture of man and his life in prehistoric times, an archaeologist studies minutely the pieces of objects he finds and the layers where he finds them. In this task of reconstruction, he has the help of the geologist, zoologist and other scientists.

The archaeologist digs very carefully with his pickaxe and spade. When he finds something he does not lift it up immediately. An object which has lain in the earth for centuries may crumble on rough handling and its story may be lost forever. With a knife and brush the archaeologist removes the dust from above and around the object without disturbing its position. Once it happened in Iraq that, while excavating the tomb of an ancient queen at Ur, a gold knob was found. When it was carefully removed, a hole was seen in the ground beneath it. This suggested that under the knob there was something made of wood which had decayed and turned to dust, leaving only the hole there. The archaeologists poured plaster of paris into this hole. The result was a complete plaster cast of a harp, and in it were studded here and there gold nails that, like the gold knob, once decorated the precious harp of the queen.

Dating Archaeological Finds

Archaeologists use different methods to determine the date of the articles they discover. If coins or inscriptions bearing the name of a king are found, the approximate date of other objects found



1.1 Section of stratified site at Hastinapur

with them can be fixed. Dating is easier if the site is stratified, that is, if it is a place where human settlement has been continuous for centuries, so that the archaeological remains of different times are found in the same place at different layers or levels. The objects found at lower levels of such sites belong to an earlier period than those found at the upper levels. Stratified sites read almost like a book: archaeologists can often read through the thousands of years back to the first foundations of the settlement.

Physics has greatly helped in finding out how old an object is. All living things, whether plants or animals, contain radio-active carbon called Carbon-14. Radio-active materials, as you know from your study of physics, are those which send out very,very small particles at a fixed rate that can be measured. When animals and plants are alive, they absorb the same amount of Carbon-14 from the atmosphere as they lose through radioactivity. When a living thing dies, it continues to lose Carbon-14 but ceases to absorb it from the atmosphere. Thus, its Carbon-14 content goes on reducing with time at a fixed rate. By finding out the Carbon-14 content of an object, physicists can tell us approximately how old that object is. This system of finding out the time of an object is known as Carbon-14 dating.

Contribution of Anthropology

Archaeologists are helped by *anthropology* in understanding the past. Anthropology is the study of man— of his physical characteristics and his culture, his customs, his modes of behaviour and his relations with other men. The archaeologist digs out the objects. These objects have to be analysed and understood to form a picture of the life of the people. Here the science of anthropology is an aid. The anthropologist helps in reconstructing the physical characteristics of early man from the skeletal materials and in understanding the culture of a society on the basis of the artifacts, dwellings, monuments and pictures.

The study of today's primitive societies by anthropologists and others has helped in understanding prehistoric societies.

Historians, in co-operation with archaeologists and anthropologists, are thus enabled to trace the development of human societies from the prehistoric to the historic period.

LIFE BEGINS ON EARTH

The Earth : Man's Home

Physical features and climate have always had a great influence on the development of human customs and habits. The age of the earth is now calculated to be about 4500 million years. In the early period of its existence, the earth was restless. Deep-seated forces inside the earth, plus wind, rain, and ice on the surface were constantly changing the shape of the earth's crust, forming mountains and oceans. Sometimes old sea beds were thrown up by earth movements to form mountain peaks. An example of this process is the peak of Mt. Everest where under the thick ice can be found fossils of invertebrates that once lived on the bed of an ancient sea. The changes in the earth's surface produced changes in climate which in their turn greatly influenced the development and distribution of life.

Geological Ages of the Earth

The geologist tries to read the history of the earth from the layers of rocks that have been formed over the hundreds of millions of years of its existence. The rock layers formed first are naturally below the rock layers that were formed later. This vast span of geological time is divided into five eras, each named according to its most characteristic forms of life.

Look at the illustrated chart which presents in a simple way the geological ages and their outstanding life forms. When speaking of geological times we do not speak in terms of decades or centuries but millions and hundreds of millions of years. The last of the geological eras, the

1.2 Geological eras, periods and time of each era, and their characteristic forms of life

Caenozoic in which we are living is yet the shortest, less than one-fiftieth of all geological time. Even this era extends over 70 million years. The entire period of human civilization, as compared to geological time, appears to be extremely short. If we imagine that the 4500 million years of the earth's history since its birth are represented by a road of 100 kilometres and we walk along it, we would not come across any life, even vegetation, at all for the first half of our journey. We would have to continue up to the 88th kilometre before even simple invertebrates, such as worms and jellyfish, would begin to appear in the sea. At the 93rd kilometre certain organisms would leave the sea to live on land, but the mammals would not come on the scene till the 98th kilometre is reached. The entire period of man's physical evolution would not take more than the last 20 metres of our journey. And the age of written history and civilization would hardly take more than half of the very last stride !

From Simple to Complex Life

The growing knowledge in the various branches of the natural sciences particularly in geology, biology and palaeontology, has left little doubt that the earth and all living forms have been changing and developing. That is, they have been undergoing continuous *evolution*, or development through change.

Both the scientist and the historian study evolution; the scientist is interested in organic or biological evolution while the historian studies cultural evolution. Through this process, life which began hundreds of millions of years ago in the sea in single-cell forms evolved into organisms of more and more complex cells.

There are many similarties in the physical structure and functions of lower animals and of man— the highest product of the process of evolution. Man is both a mammal and a vertebrate, and hence has common ancestry with mammals and vertebrates. To Charles Darwin, as you know from your study of science, goes the credit for formulating the systematic explanation of evolution, and for collecting a great mass of evidence to support the explanation. Darwin's conclusions have been confirmed and developed by the further discoveries of fossils that show in hard rock the successive stages in evolution. However, the record is still incomplete for answering questions as to how man came to be what he is today.

EVOLUTION OF MAN

The Ice Age

Enormous changes had taken place during the Pleistocene period. There had been mountain-building on a large scale. When this period began the continents and oceans had taken their present form and the climate of the earth was roughly the same as we find it today. But, gradually the climate became colder. From about 600,000 until about 10,000 years ago the northerly parts of Asia, Europe and North America had alternate phases of very cold and warm climates. During the cold phases, the North Polar Ice Cap spread southward as a continuous sheet of ice over what is now the temperate zone. In the Himalayas the glaciers almost reached the foothills.

The term 'Ice Age' is actually misleading, for there was not one single continuous ice age but four quite distinct glacial periods, each separated from the next by a mild or warm interglacial period. So, alternating with four glacial periods

there were three interglacials. Early man made great progress during these interglacial periods.

The big climatic changes during the Ice Age naturally had a great effect on the plants and animals of the time; they migrated north and south with the alternating phases of heat and cold. The animals which depended on particular plants for their food had to migrate or adapt themselves to a new diet.

Sometimes, barriers on land and on the seas prevented the migration of animals, and many species that were unable to adapt themselves to the changed climate and new diet died out. Others went through processes of evolution and developed into new species better equipped to survive in the new climate. Among those species that lived through the great climatic variations were advanced primates, particularly man. Man belongs to the group of mammals known as *primates*. The classification includes not only man but all extant apes, monkeys, lemurs and tree-shrews.

Man Stands Erect

The tree apes, common ancestors of gorilla, chimpanzee and man, lived perhaps ten million years ago. Some of the apes—we do not know when or how—came down from the trees and gradually learned to stand and then to walk on their hind legs. This was the most important event in man's evolution. The erect position helped these animals to look farther in all directions and to save themselves from their deadly enemies, the bigger animals. They were thus on the road to developing a new way of life.

Life on the ground resulted in biological changes. The apes' daily exercise of climbing trees had already developed the bones of their wrists and accustomed their 'hands' to grasping things. In a standing position, the forelimbs were free to handle objects and to hold stout sticks as weapons. In course of time, the hand developed flexible fingers and an opposable thumb. This new development made the ape man a craftsman. He could now grasp things and bring them closer to his eyes. Side by side, the position of the internal organs of the body also changed to suit the erect posture. The brain developed and helped him to use his intelligence in fashioning tools and, eventually, in rising above the other animals.

Man Learns to Make Tools and Work with His Fellows

Biological development alone does not explain the essence of the development of man. The work that he performs in co-operation with his fellow men, and with the aid of tools which he makes, distinguishes man in the animal world. The first tools he used were pieces of stone and other things that he found lying around. The use of natural tools eventually caused man's ancestors to try to adapt objects to their needs and, later, to make different tools for different tasks. Thus, they now transformed natural objects into implements and took the first big step towards improving the living conditions provided by nature.

Man's Power of Speech

Every generation of human beings inherits the knowledge of the previous ones. Every generation adds new knowledge and passes it on to the next generation. It is through the continuous accumulation and transmission of

knowledge that man attains cultural progress. The ability to speak, the peculiar characteristic of man, makes this process of transmission possible.

The power of speech depends essentially on higher intelligence which produces ideas for expression. Only human beings possess such high intelligence.

Tool-making is also related to intelligence. It is thus a peculiarly human activity. Archaeologists, when determining whether the fossils of primates excavated by them are indeed of men and not of apes, decide by finding out whether these primates made tools. The artifacts of man, not his physical structure, are the best indication of the stage of culture he was in.

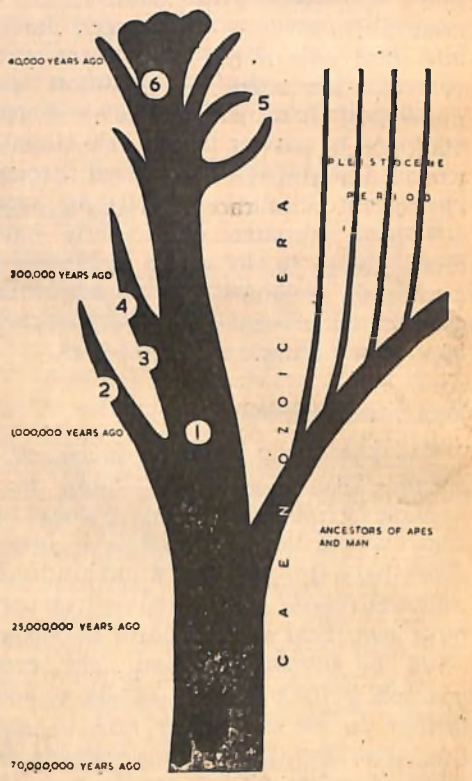
Species of Prehistoric Men

Latest discoveries have left little doubt that the earliest *hominids*, or man-like beings, first appeared in Africa during the early Pleistocene epoch. All of these have become extinct. Unfortunately no skeletons belonging to the Old Stone Age men have been found in India, although fossils of apes that belong to the common stock from which man and modern apes finally evolved, have been found in the Siwalik Hills.

The most well known of these lived more than eight million years ago and has been given the name *Ramapithecus*.

The first ape-man, who walked upright and was very close to being a hominid, was found in central Africa and named *Australopithecus*. A sub-species of Australopithecus, *Zinjanthropus*, is definitely known to have made tools. These beings seem to have lived as early

1.3 Ramapithecus



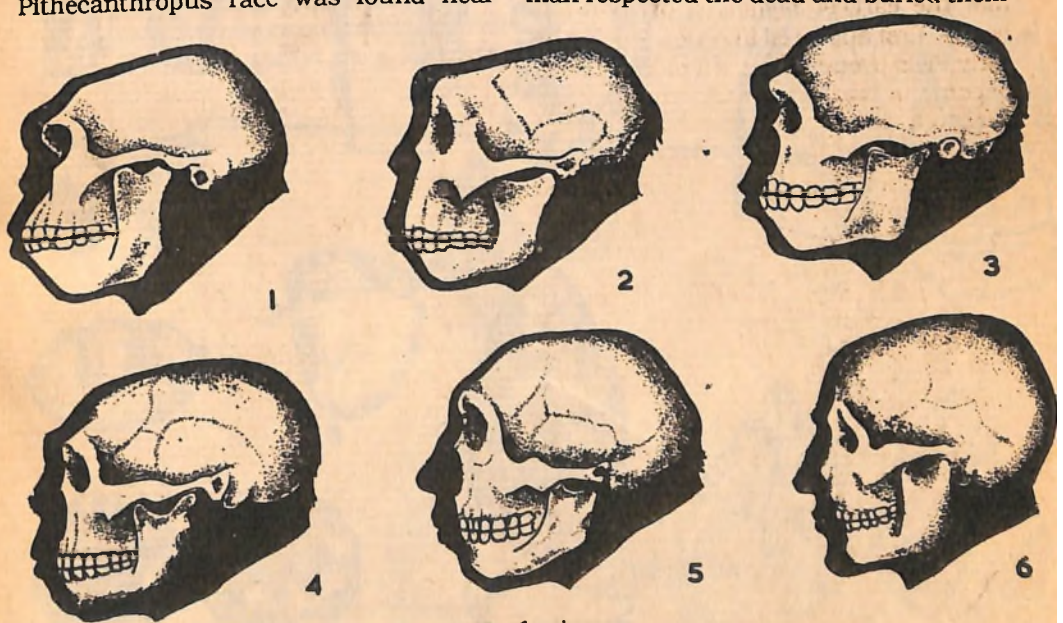
1.4 Tree showing the species of early man
1. Australopithecus 2. Zinjanthropus
3. Pithecanthropus Erectus (Java Man)
4. Sinanthropus (Peking Man) 5. Neanderthal Man 6. Cro-Magnon Man

as 500,000 years ago. They lived naked like other animals and ate mostly berries, nuts, roots, insects, and worms.

The remains of the earliest hominids in Asia were found in Java. Here were unearthed, from a river deposit a skull cap, teeth, and a thighbone. These bones, after study, were declared to belong to a hominid who could walk erect; so he was called the *Pithecanthropus Erectus*, the erect ape-man. Several years later the fossil remains of forty similar creatures were found in a cave near Peking in China. The *Peking Man*, who is known as the *Sinanthropus*, proved to be a slightly advanced cousin of the Java Man. It appears that the Pithecanthropus lived in many parts of South-east Asia between 500,000 and 200,000 years ago. In Europe the fossil representing the Pithecanthropus race was found near Heidelberg, Germany.

Much is known about the physical appearance of the Sinanthropus and of the way he lived from the study of his skeletons and of the caves where he lived. He knew how to make fire. During the Japanese invasion of China, the skeletal remains of the Sinanthropus were lost, or stolen. Luckily, the photographs and the casts of these remains have survived and are available for study. The search for the original remains, however, continues.

Neanderthal Man gets his name from the valley of Neander in Germany where his bones were first discovered; he represents the Middle Palaeolithic Age. He flourished in the icy caves of the fourth glaciation of the Ice Age, about 160,000 years ago, but died out rather abruptly some 40, 000 years ago. The Neanderthal man respected the dead and buried them



1.5 Figures showing the species of early man

1. Australopithecus 2. Zinjanthropus 3. Pithecanthropus Erectus 4. Sinanthropus 5. Neanderthal Man 6. Cro-Magnon Man

with offerings in graves. He seemed to believe in religion and a life after death also.

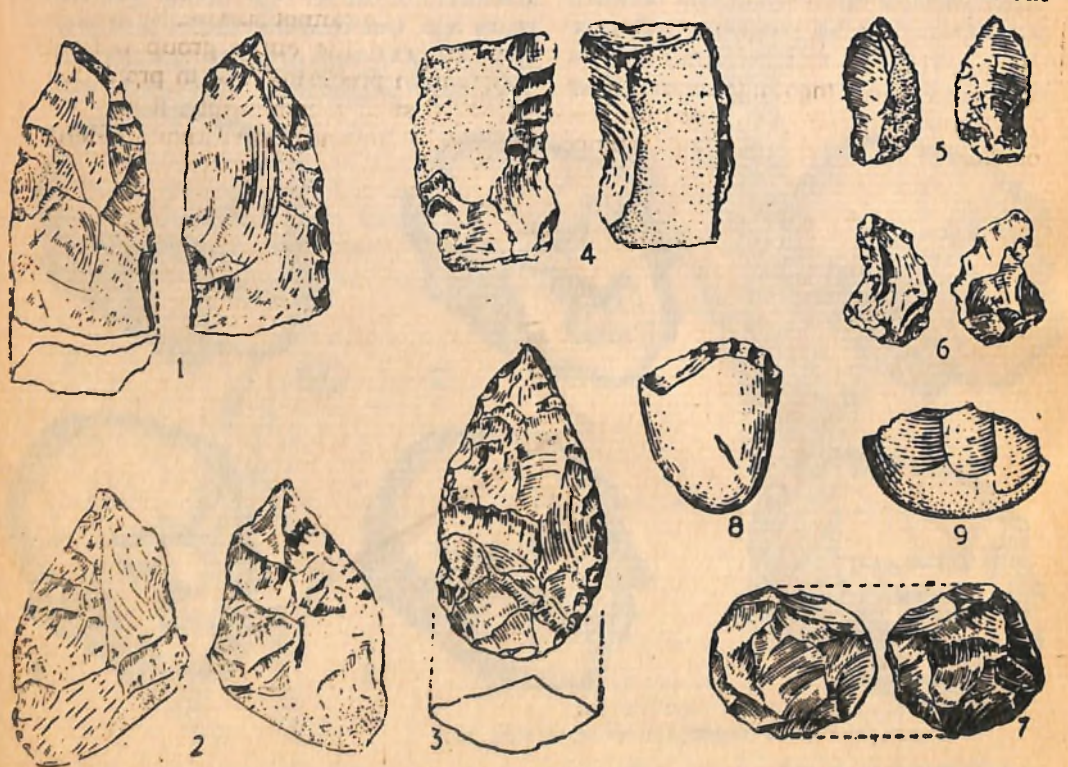
Neanderthal Man seems to have been succeeded by the *Cro-Magnon Man*, who belonged to the *Homo sapiens* species. There was also the *Grimaldi Man*, who also belonged to the *Homo sapiens* species.

THE PALAEOLITHIC AGE

Tools of Palaeolithic Man

As already stated, the process of cultural development may be said to have started when our sub-human ancestors had acquired the skill to produce crude tools that often looked like stones chipped or shaped under natural conditions. Stones flake easily as a result of many natural causes. This natural flaking might have suggested to man that he could also make stones into tools for different purposes. The tool-maker of the Pleistocene Age gradually learned just how to hold a piece of stone or rock and just how forceful a blow to deliver precisely at what angle, in order to remove flakes of the right size from the desired spot. Man in the Palaeolithic Age made and used only crude stone tools and was only a food-gatherer.

The tools of the Palaeolithic Age fall into three major types: *hand-axes, choppers,* and *flake implements.* Hand-axes appear to have been held in the fist, either to cut



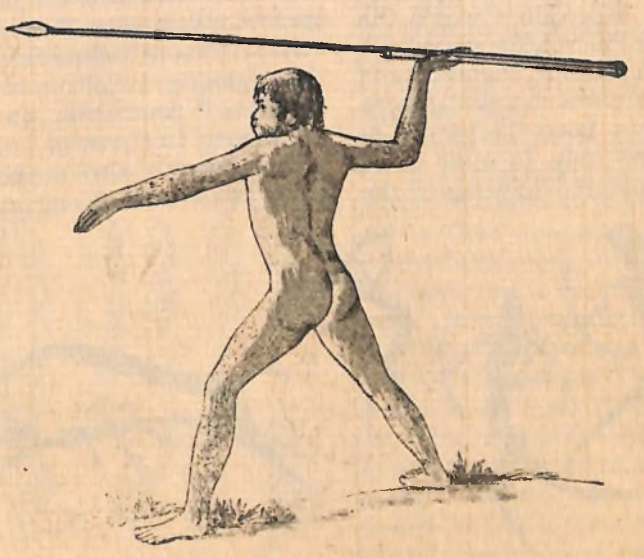
1.6 Stone tools of the Palaeolithic Age

or to give smashing blows. They were made by removing flakes from the hard centre of a piece of stone. Choppers must have been used to chop meat. They were made of heavy stones worked to a sharp edge in one direction only. Flake implements were smaller and thinner than hand-axes or choppers, but had sharper edges. Palaeolithic tools, found in many places in Europe, Africa, and Asia, have remarkably the same standard forms and were made in the same way.

Later a number of other tools were made of bone and ivory. There were even tools to make tools. Growth in knowledge led to the invention of mechanical devices like the bow and spear-thrower as weapons, which were superior to mere muscular power in fighting a deadly enemy. The bow and the spear-thrower increased the hitting range and accuracy. The hunter could shoot out several arrows or throw several spears at a distance, without disturbing a herd of animals. The bow remained the hunter's most efficient hand weapon till firearms were perfected.

Beginnings of Community Life

Hunting and fruit-gathering continued to be man's main occupation during the Palaeolithic Age and there is no evidence either of agriculture or of the domestication of animals. The details of social organization, or how man lived in relation to other men, are not known. But it is believed that he had learned to cooperate with his fellows in the common search for food. Physically, man is a very weak animal. He discovered long ago that unless he lives and acts together with other men, he cannot survive. He lived in a group and the entire group worked together in procuring food in protecting itself. In such a community, it was not possible for anyone to live without working



1.7 Spear-thrower

or to live on the labour of others. Of course, those who could not work, such as the very young and the very old had to be looked after by the community.

These communities, or clans did not settle in one place for a long time. They were compelled to follow the seasonal migration of the herds of animals. Sometimes, however, the game was plentiful in certain areas and this allowed them to live in a place for long periods in skin tents of caves.

The Palaeolithic man does not appear to have developed a sense of property. Very probably also, all men and women were regarded as of equal importance, and social inequalities had not yet come into existence.

Palaeolithic Art

Starting with crude outline drawing on the walls of his caves, Cro-Magnon Man became an accomplished artist in a few thousand years, especially towards the last phase of the Palaeolithic period. He made advances in painting, engraving and sculpture. Several caves containing these works of art have been discovered in France, Spain and Italy. In some caves there are multi-coloured drawings on the walls and ceilings which are almost 'picture galleries'. These paintings and engravings show herds of running bisons, horses, bears, reindeers and mammoths, and interesting hun ing scenes. Human and animal figures have also been found engraved on bones and ivory. Palaeolithic art attained great heights and is regarded with admiration even today.

The paintings are mostly found deep in the caves, where sunlight does not reach. It is so dark there that the pictures could have been drawn only by the light of a torch or a fire. If these pictures were drawn for pleasure, they would not have been painted in such dark and narrow places. In fact, these caves with the paintings on the walls look almost like temples.

This has led scholars to suppose that the paintings had a magical purpose. Hunting was a daily occupation of the Palaeolithic man. His food primarily depended upon his success with game. Several pictures show animals dying, with spears in their sides. This was what man wished to happen when he went hunting. The paintings might have given him a sense of power over the animals he would meet in the open.

This view is also supported by the practices common among primitive people

1.8 Cave Painting of Prehistoric Man

of today. They engrave or paint on rocks as part of the rites and ceremonies they perform at birth, at death, at coming of age and at the time of marriage. They dance, masked, during hunting rites to help them kill animals difficult to find or kill.

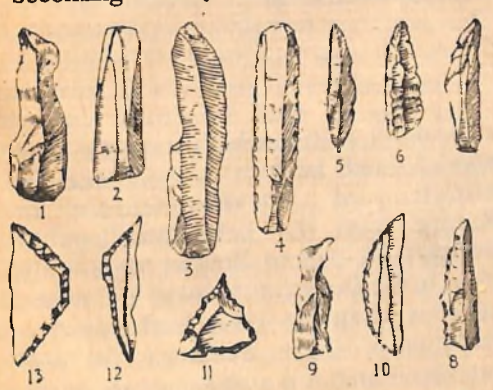
The practice of art, whatever its purpose, gave Palaeolithic man a sense of beauty. He decorated personal belongings and engraved tools. He beautified his body with necklaces, pins and bracelets made of ivory, bone, stone, and shell. The implements he made of bone included knives, harpoons, and spearheads.

In India, at a number of places, paintings have been found in rock shelters. While it is difficult to date most of these, the paintings at Madhya Pradesh, are believed to be of the Stone Age.

THE NEOLITHIC AGE

The Transition Stage

Man made significant advances in the Middle Stone, or *Mesolithic* Age which separated the Palaeolithic times from the Neolithic (New Stone) Age. In this age, the glaciers were shrinking and the areas formerly covered by ice were gradually becoming thickly forested. Big animals moved away, but the dog was domesticated by man and helped him in hunting game. The Mesolithic Age is marked by the wide use of small tools known as *microliths*, some of which were used as spearheads and arrow heads. The Mesolithic people also used the sledge as a means of transport over snow and ice. They harvested the foodgrains which grew wild in some regions. It is possible that the Mesolithic people of Palestine also practised cultivation to some extent.



1.9 Microliths

Beginning of Farming

The change from food-gathering to food-producing did not come about suddenly; it grew gradually out of the practices of the Mesolithic people. We know that plants grow from seed, but this was not so obvious to man in those days. He saw plants growing around him fertilized naturally year by year. Ancient man took these things for granted and harvested ripened grain, not knowing yet that grain could be planted. When fertility was exhausted and the soil gave little or no crops, he would move on to new lands that bore grain.

Perhaps, one day someone observed that the grain swept from the threshing and deposited on the dung heap sprouted and in time produced golden grain. It required close observation to see how the plant grew from a seed. The man who first tried to grow plants from a seed may be considered the first great scientist.

In the early stages of agriculture, man could sow and resow the same plot of land year after year till the soil lost its fertility. He had no idea of fertilizing the soil with manure. He simply moved to a new area, cleared the land and cultivated it in the old way till that land, too, was worn out. This method of shifting agriculture is still

practised in some areas. More permanent settlements developed in areas which nature fertilized year after year with the silt from floods or decayed matter.

There is evidence to show that agriculture was first practised in Thailand and in the well-watered valleys on the borders of the Arabian and Iranian deserts known as the Fertile Crescent. The Fertile Crescent is the original home of sheep, goats, pigs and cattle, where wheat and barley grew as wild grass.

Also, in West Asia, in Palestine, people had developed a high level of Mesolithic culture. The stratified excavations at Jericho, in Palestine, have revealed three levels of culture which lie above the remains of Palaeolithic times.

These show the later development of a settled village life. Jericho had well-constructed huts, with walls of bricks and stone built all round the village for defence against enemies. It is estimated that this settlement, which had a population as large as 3000, grew up about 7000 B.C. The bones of numerous animals found there show that the people kept herds of domesticated animals, especially goats. The goat appears to have been the second species of animal, after the dog, to be tamed.

Numerous ruins of agricultural villages, similar to Jericho and more or less of the same age, have been discovered in north Syria, Iraq and Iran. These discoveries have left no doubt that the domestication of animals and cultivation of cereals spread very rapidly from Palestine to these countries and then, about 5000 B.C, to the Nile Valley in Egypt. The change-over from hunting and food gathering to farming and stock-breeding took place in India later.

Development of Settlements

Scholars think that the Neolithic Age started when man had completely adopted the Mesolithic invention of agriculture. In the Neolithic Age man's life was so completely transformed that the age is termed the 'Neolithic Revolution' . When he took to agriculture, he soon found that it was not enough to plant seeds.

The growing plants had to be tended. At the same time, man was no longer compelled to move from place to place to seek areas where game was plentiful. He could now keep large herds of cattle which he could always kill for food.

Agriculture, thus, paved the way for a settled life. Men started living in pit dwellings, mud houses made of wooden posts with thatched roofs.

The settlements were generally near the fields which the people cultivated. These settelements gradually developed into villages and even small fortified towns. Settled life led also to the development of organized social life.

Neolithic culture which started in Asia spread much later to Europe. Much is known of developments in Europe from the Lake Dwellings of Switzerland, where houses were built close to the shores of the lakes and raised on piles when the water level rose. The remains of these dwellings are well preserved and give a clear picture of the life of the dwellers.

1.10 Lake Dwellings of Switzerland

Development of Mixed Farming

How the domestication of animals began is not known. Perhaps, there were large numbers of animals in areas near water where men also were concentrated. Here man could observe the animals and study their habits, and this knowledge must have enabled him to tame them. It was, again, easy for an agricultural people to domesticate animals and feed them on the husks of the grain that were left after threshing. In any event, sheep and goats, pigs and cattle-and later, horses and asses—were tamed and kept in pens. Man, thus, obtained food from the soil and also from animals. In the pens, the animals could be observed even more closely. Calves suckling milk must have given man the idea that he too could get food other than meat from cows and goats. This practice which combines agriculture with the raising of animals is known as 'mixed farming'. Animals, however, were chiefly used to provide meat and milk; they were yet to be used as beasts of burden or to draw the plough.

The development of agriculture brought varied changes. It became necessary to conserve the food that was not immediately used. The whole crop could not be consumed as soon as it was reaped: it had to last over the whole year, till the next harvest, with a part of it set aside for seed. Grain storage bins have, thus, been found even in the earliest Neolithic settlements. Similarly, livestock could not be slaughtered thoughtlessly. The young cows must be spared and reared to provide milk and to increase the herd. The increasing surplus provided food during bad seasons and crop failures and also supported a growing population. It was the dependable and increasing supply of food in an agricultural economy that led to the growth of population. Villages became larger and some grew into towns.

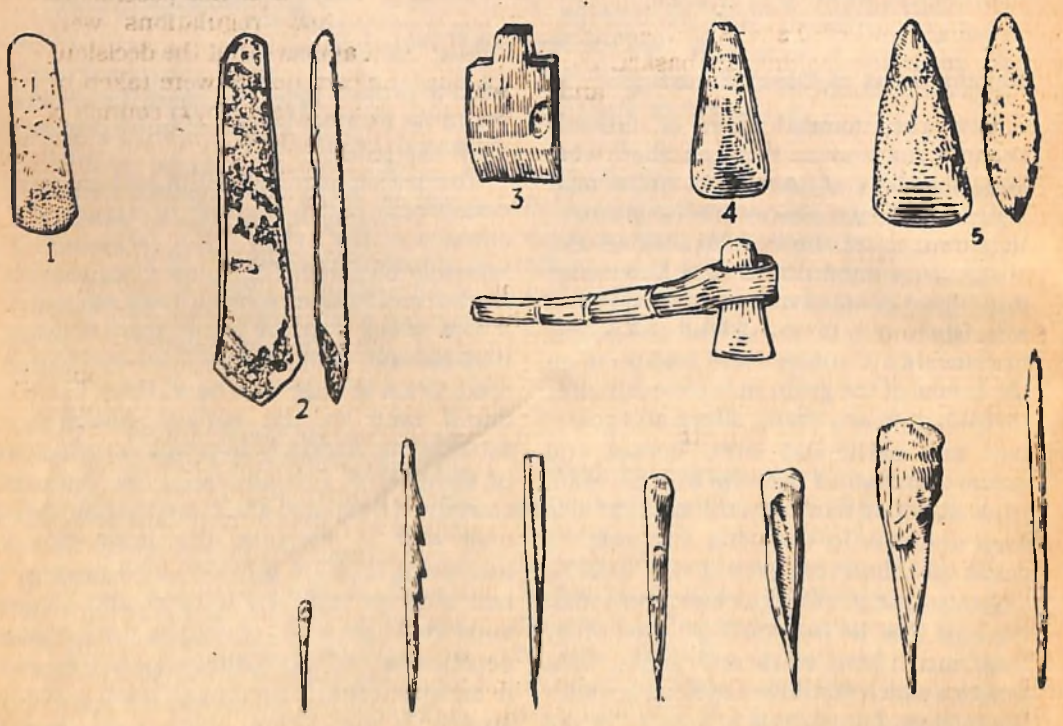
Polished Stone Tools

Neolithic tools are distinguished from the Palaeolithic chiefly on account of their higher utility and more skilful construction. An important tool of the Neolithic times was the polished stone celt. It was made of a large piece of fine-grained stone. One end of it was ground down and polished to sharpen the cutting edge. By fixing it into the end of a stick, it could be used as an axe. It was used to clear forests and as a hoe to till the land. It also enabled man to cut and shape timber, which led to the growth of carpentry. The knowledge of carpentry thus gained was to be used for making ploughs, wheels, plank boats, and wooden houses.

Another important tool of the Neolithic people was the sickle. This was made of a wooden handle into which blades of flint flakes were set. It was used to cut and gather the crop. There were, however, great improvements in the weapons of war and hunting. The bow and arrow continued to be used, although arrowheads were made sharper. In some areas, people used a new weapon, the sling. The Neolithic man also started making use of bone and antler for making tools like needles and harpoons.

Invention of Pottery

To store and cook food, vessels were needed which could hold grains and liquids as well as stand heat. At the



1.11 Stone and bone tools of the Neolithic Age

beginning of Neolithic times, baskets made of straw and twigs were used to store fruits and dry things. These were smeared with mud to hold liquids. It may have so happened that such a basket fell into the fire by accident, with the result that the straw was burnt out while the layer of clay was left standing in the shape of a dish hardened by the fire. This dish of baked clay was found to be waterproof; the clay neither mixed with water nor was washed away. In this way, perhaps, man got the idea of making and baking pottery. Man became a creator. He could turn clay into stone.

The Neolithic people who knew how to make baskets with round strips or ropes of fibre learned to make coiled pots. They coiled long, thin ropes of clay—well mixed with sand, powdered shells and chopped straw—as in the making of a basket. The coils were then pressed together and ridges smoothed out with wet hands and pebbles. These people soon learned to bake their pots in a very hot fire, above 600°C. This made them hard and more waterproof. The invention of clay pottery is a characteristic of all Neolithic cultures.

Spinning and Weaving

Among the remains of the earliest Neolithic villages in West Asia, we find the beginnings of a textile industry. Clothes woven of linen, cotton and wool had started replacing skins and skirts of leaves. Cotton was grown in the Indus Valley soon after 3000 B.C. Wool was used in Iran about the same time. But, before textiles or woven cloth could be made, the two processes of spinning and weaving had to be invented and used together. The invention of the distaff and spindle for spinning, and of the loom, an elaborate machine for weaving, are great triumphs of human intelligence.

Improvements in Community Life

Settled life and cultivation gave man leisure; he had no longer to think always of getting food. During spare time he could make stone tools, hoes, or pots and weave cloth. Some people spared from producing their own food could even devote themselves to other activities all the time. This resulted in a division of labour. The division of labour made it possible for various groups to specialize, that is, to acquire greater skill and learn better techniques in doing one kind of work.

The settled community life needed rules to regulate the behaviour of the members of the community. It is not possible to know exactly how regulations were established. It appears that the decisions regarding the community were taken by the people as a whole, or by a council of elders, as is the practice in tribal societies. There were perhaps no kings or any organized government. Most likely, there were chiefs elected by the community for their qualities of leadership. But, these chiefs could not pass their positions on to their sons and they enjoyed few special privileges. Archaeological excavations have not revealed anything which would indicate the prevalence of a higher status for some members of the community. This is also supported by the study of life in many tribes in modern times. Thus, social inequalities do not seem to have emerged even in Neolithic times.

It appears that cultivated land was regarded as the property of the community as a whole. The community gave plots of land to individual families to cultivate, or the entire community worked on the common fields. It is likely, however, that the ownership of land gradually passed

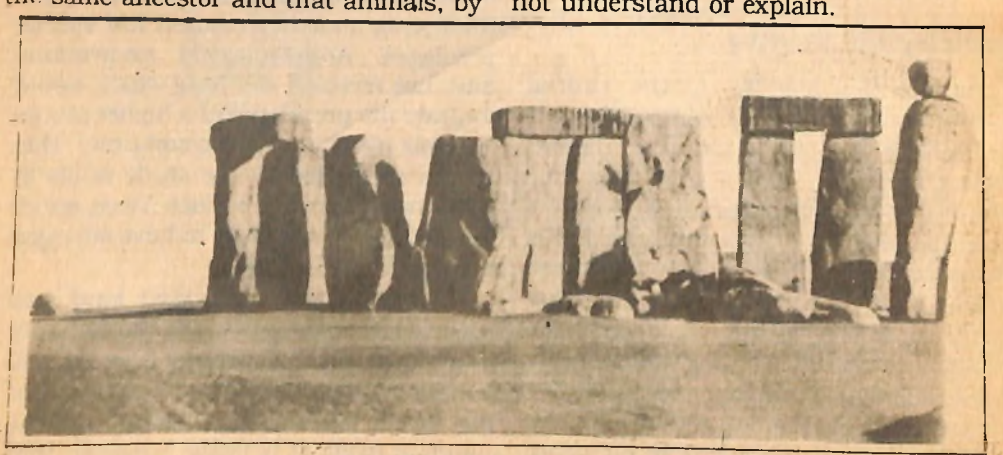
into the hands of individual families and plots of lands became family property instead of belonging to the whole community. Houses, pots and ornaments must also have been the property of individual families.

Religious Beliefs of the Neolithic People

The system of burying the dead provides some indication of the religious beliefs of the Neolithic people. The dead were buried with weapons, pottery, food and drink in their graves, in the belief that they would require these things even after death. Such graves are found in the Palaeolithic period also. Perhaps in the Neolithic period, there was a change in the significance of the graves. The earth now provided food for the community. The spirits of dead ancestors who lay under the earth were supposed to assist in the growth of crops.

There is also evidence of the beliefs in *totems*. A totem is the image of an animal or a plant as a symbol for a clan, or group of families living together. In early times people believed that animals and men had the same ancestor and that animals, by providing food for men were 'a friend or relative'. Even after man had taken to agriculture, his life was not entirely secure. There was always the danger of some catastrophe destroying his crops, livestock and game. These conditions of insecurity and man's inability to understand the processes of nature led to the belief that the welfare of the community was bound up with an animal and was completely dependent upon it. Such beliefs developed about trees and plants also. Men chose animals and trees to be their totems, their ancestors and protectors.

Every tribe had its own totem. It tried to keep on friendly terms with its totem, and the members of the tribe asked its totem for favours. The sun, the moon, stars, and other forces of nature were also believed to have special powers and man also tried to please them through worship. In course of time, this worship became elaborate rituals, as magic and religious beliefs tied the members of the community to one another. These and other similar beliefs expressed man's feeling of helplessness in the face of things he could not understand or explain.



1.12 The Stonehenge, England

Small clay figurines of women have been found in many Neolithic settlements in many parts of the world. These figurines are called 'mother goddesses'. When man began to cultivate the soil, the earth became the 'mother' and the figurines were worshipped in the belief that the fertility of land would increase. Music and art of the Neolithic people, like the cave art of the Palaeolithic man, were similarly related to the hopes and fears of man.

The burial places of some of the communities in Neolithic Age and of some in later periods were marked with *megaliths*, or large stones. Such places have been found in western Europe and south India. Some of these appear as single, huge standing stones; others look like tabletops set on several high stones or boulders. Under these table-like structures are chambers containing the dead. These megaliths in some places were also used for building a kind of temple to worship the sun-god at the time of summer solstice when the sun's power is at its greatest. One such structure is the famous Stonehenge in England. Here large stones were fitted to form a semi-circle, part of which was capped to form a doorway.

1.13 Wheel—its evolution and uses. a. The first wheels cut from logs. b. Making pottery on the potter's wheel. c. Egyptian wheel used in chariots. d. Sumerian chariot.

Invention of the Wheel

About this time, perhaps, man invented the wheel which brought about a technological revolution. It is difficult to imagine what we would do without the wheel. Its invention must have undergone many stages before it took on a usable form. The ultimate product must have been the result of improved carpentry. This was made possible by the discovery and use of metals.

The first use to which the wheel was put appears to be in the making of pottery. This is the potter's wheel and it must have made pottery a specialized craft. The wheel may then have been used in drawing a cart. Man had already learned the use of wheelless sledges. Huge, round trunks of trees were also rolled to carry heavy articles. The wheeled cart made transportation very much simpler and soon animals were used to draw it. The wheel was also used quite early in spinning.

The story of man from the remotest past to the growth of settled life is a story of progress. The pace of progress was slow in the beginning but became quicker with the Neolithic Age. In the Palaeolithic period man's central problem was how to keep himself alive. This problem, as with animals, took most of his time and effort. Yet, unlike animals, he could talk and make tools and, thus, took the first steps in his struggle to control his environment.

The pace of hman progress quickened by about 8000 B.C. with the coming of the Neolithic Age. Man became a food-producer and could change nature to suit his ends. Several inventions followed to pave the way for the development of civilization. Man now produced his own food by growing cereals. He domesticated animals, made kiln-fired pottery, produced cloth and developed techniques for making polished stone tools. Above all, he seems to have invented the wheel. All this enabled him to lead a settled life in an organized community. Co-operative living provided man with leisure and the opportunity to further increase his knowledge.

Starting in Western and South-East Asia, the Neolithic revolution spread to other lands, in the east and the west. The Neolithic village communities provided the basis for the emergence of civilization in Mesopotamia, Egypt, India and China.

EXERCISES

Things to know

1. Explain the meaning of the following terms:
   Prehistoric times, Carbon-14 dating, Palaeolithic period, Mesolithic period, Neolithic period, geological eras, hominid, microliths, totem, megaliths, *Homo sapiens*, evolution of man, culture.
2. What is the work of an archaeologist, and anthropologist,a geologist, and a zoologist ? How does the work of each of these scientists help the historian in collecting facts about the pace of man's progress ?
3. Describe the principal characteristics that distinguish man from other animals. Give the names of five different species of prehistoric men.
4. Summarize the inventions and discoveries of the Stone Age man.

5. What are the differences between the Palaeolithic and Neolithic periods of the Stone Age as shown by man's tools and products ?

Things to do

1. Work out an appropriate scale for a Time Line on the classroom wall and show on it approximate dates of the following:
   Beginning of the earth, appearance of life on earth, appearance of mammals, appearance of man, beginning of recorded history, invention of fire, beginning of settled life. Discuss the pace of man's progress as the completed Time Line pictures it.
2. On the outline map of Eurasia, locate the sites where the Stone Age cultures have been found.
3. Visit a museum and study any materials on display—tools, utensils, drawings—that help us to understand the Stone Age culture. Prepare a list of the objects you see, with a sentence or two describing each.
4. Draw sketches to show possible stages in man's progress in the following areas :
   (i) Improvements in tools;
   (ii) Development of the wheel.

Things to think about and discuss

1. What can we learn about the change in our lives today by studying the causes of the change in the life of early man ?
2. Do you think change is more, or less, rapid in man's life today than in prehistoric times ? Give reasons for your answer.
3. Why do the changes from food-gathering to food-producing and from hunting to domesticating animals represent such big advances in the progress of man ?
4. What would be the possible results of eliminating the uses of fire and the wheel from modern man's everyday activities ?
5. Do you think it would be possible for man to live anywhere today exactly as the Stone Age man lived? Why, or why not ?

CHAPTER 2

Bronze Age Civilizations

MAN had taken an important step towards progress during the Neolithic Age when he took to agriculture, began to make more efficient tools for his many needs and started living a more or less settled life. In about 4000 B.C., the accumulated knowledge and skills of the preceding thousands of years, combined with many new inventions, enabled man to advance to a new stage in his progress—the stage of civilization. The most important feature of a society when it reaches the stage of civilization is the emergence of cities. The rise of cities is accompanied by so many far-reaching changes in every aspect of life that this development is described as a revolution in human history—the *Urban Revolution*. The first civilizations began to emerge in some parts of the world in about 4000 B.C., or about 6000 years ago. The archaeologists, through their work during the last 200 years, have given us fascinating accounts of these first civilizations.

It is interesting to note that most of the first civilizations arose in certain river valleys. This happened because conditions in these areas were favourable to the development of civilization. There was plenty of rich soil in these areas, which could be easily worked. The water required for cultivation was available in abundance and the floods enriched the soil every year. The farmer was able to produce much more foodstuffs than he required for his subsistence. People had to work together for the proper use of water. Draining flood waters, building dykes and digging canals were the activities that demanded work on a co-operative basis and a high degree of organization.

In course of time man discovered another use of the river. The river is 'nature's road' and man learned to construct boats and carry himself and his loads on rivers.

The settled life meant that the homes and hearths had to be protected from nomadic invaders. Men no longer had to devote all their energies to the problems of producing food. Some were able to devote themselves to the study and development of mathematics, engineering,

metallurgy and other branches of knowledge on systematic lines. Trade developed as man searched for raw materials and came into contact with others for the exchange of goods. Leisure promoted architecture and sculpture, music and dance.

Use of Metals—Copper and Bronze

The discovery and the use of metals are of great importance in the history of mankind. They mark the transition to civilization. Metals provided man with a material which was more durable than stone and could be worked for making a variety of tools, implements and weapons to meet his growing needs. The first metal to be discovered and used for making tools was copper. For a long time stone tools continued to be in use along with copper tools in some parts of the world. The period when man used both stone and copper tools is known as the *Chalcolithic period*. The word *chalcolithic* is formed from *chalkas* meaning copper, and *lithos*, meaning stone.

In the early stages, man did not know about the copper ore, which is recovered from mines. He used only native copper which was collected from the river banks. The earliest use of native copper is believed to have started in about 5000 B.C. Later, man learned to extract copper from the ore from mines. The earliest use of copper extracted from the ore began in Sumer in southern Iraq in about 4500 B.C. Some of the areas where the first civilizations developed did not have copper of their own. The people of these civilizations went to far away lands to get it. This resulted in the growth of trade and helped in bringing together people from different lands.

In course of time, man learned to mix copper with tin or zinc to produce the alloy called bronze. Bronze gave man better service than copper. It is harder than copper and is thus more useful in making strong tools, weapons and implements. The bronze ploughhead was a big improvement over the old hoe. The bronze tools and the use of hammer helped in improving carpentry and led to the invention of the wheel. Because of the importance of bronze in the growth of the first civilizations, the period of the first civilizations is also known as the Bronze Age and these civilizations are called Bronze Age civilizations.

The discovery of metals ultimately put an end to the large scale use of stone implements, though we find both stone tools and metal tools in use for a time. The use of metals enabled man to fashion a variety of tools to meet his different needs. And while metal tools improved craftsmanship, it, in turn, produced new tools and new crafts.

Gradually metallurgy or the systematic method of extracting ores and preparing the metal for making tools advanced. The use of metals required specialization of skills and knowledge. Soon there arose an important section in society—workers, who were specialized in metal work.

Common Features of Early Civilizations

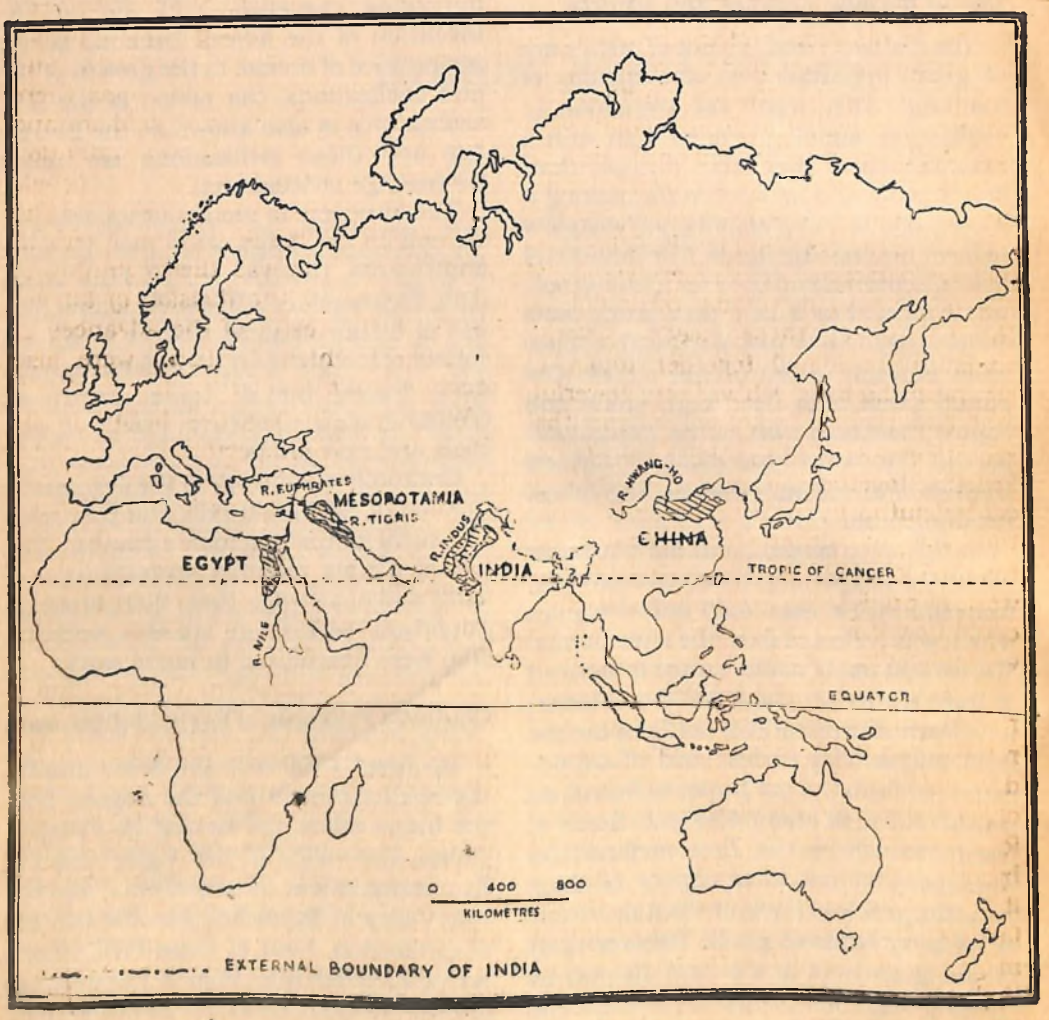
By about 2500 B.C., the areas around the Mediterranean and the Aegean Sea, the Indus valley, the Hwang-Ho valley in China, the valley of the Tigris and the Euphrates in Iraq (Mesopotamia) and the Nile Valley in Egypt had become centres of civilization. Four of these civilizations are described in this chapter. Locate areas of these civilizations in the following map. These civilizations had certain common features, although each developed a unique

character in its own contribution to human progress.

Each civilization developed an organized political and social system, trade and commerce, complex religious beliefs, writing systems, art and science and mathematics. In this chapter you will read about some of these aspects of each civilization.

Improvement in Agriculture

Farmers in a civilization have to produce more food than they need for themselves. This was not possible in



The Bronze Age Civilizations

Neolithic times when the field was small and cultivation was carried on with a hoe. Only after the introduction of the plough and irrigation, large-scale production was made possible. With a wooden plough, drawn first by man and later by animal, a far larger area could be cultivated than was possible earlier.

The requirements of irrigation also helped in the growth of civilization. The land near the rivers had to be cleared of jungles to make it suitable for cultivation. Channels to drain the marshes had to be dug. Dykes had to be put up to protect settlements from floods. An elaborate system of canals was necessary to ensure a regular supply of water for the fields. For all this, a large-scale co-operative effort was needed. A small village could not do this. To meet these needs, several communities joined together under a central authority which was very powerful and could enforce its will. Thus the requirements of irrigation helped in bringing together many people under a central authority or government in cities. Increase in agricultural production resulted in freeing many people from the work of producing their own food. They could now live in cities and specialize in various skills.

Rise of Cities, Trade, Government—The rise of cities leads to a number of far-reaching changes. Life in a city is quite different from life in a village. In ancient cities as in modern, people could not grow food for themselves. All food was produced by the people living in villages and part of it was brought to the cities. The village farmers, therefore, had to produce much more food than they needed for themselves. Trade also developed. People wanted goods made by others and they had to give something in return. In the earliest times it appears that goods were exchanged. As civilization advanced, some sort of money was used in these transactions. Thus, the idea of both trade and money developed as a result of city life.

There were other developments, too. As the people in the cities did not have to grow their own food, they were free to do other things. Gradually groups of people took to different occupations and specialized in certain skills. Soon there were artisans and traders, soldiers and officials who devoted their whole attention to one occupation. By doing so people developed new skills and new tools and learned to use some better than others. In other words this was the beginning of specialization or the *division of labour*. This was the result of the advances in technology which, in turn, were also promoted by it.

When people in cities began to be engaged in different occupations, they did not have the same interests. In other words, city life became a complex affair. An organization was needed to regulate public life and such an organization came into being. It had the responsibility to keep order, to make laws, and to look after the affairs of the city. It needed a body of persons to carry it on. In course of time, societies had governors and kings, and what we now call government arose in its earliest form.

A highly developed organization like a government has to make and record laws, maintain accounts, decide disputes and communicate with the people it is governing. Thus some form of writing has to be devised. Each of the four civilizations described in this chapter had some sort of script. And writing marks the beginning of the historical period.

THE HARAPPAN CULTURE

The first civilization in India arose in the north-western regions of the Indian subcontinent. It is known as the Harappan Culture after the name of a major site of this civilization, Harappa. It was also called the Indus civilization because some of its important sites which were excavated first, are located in the valley of the river Indus.

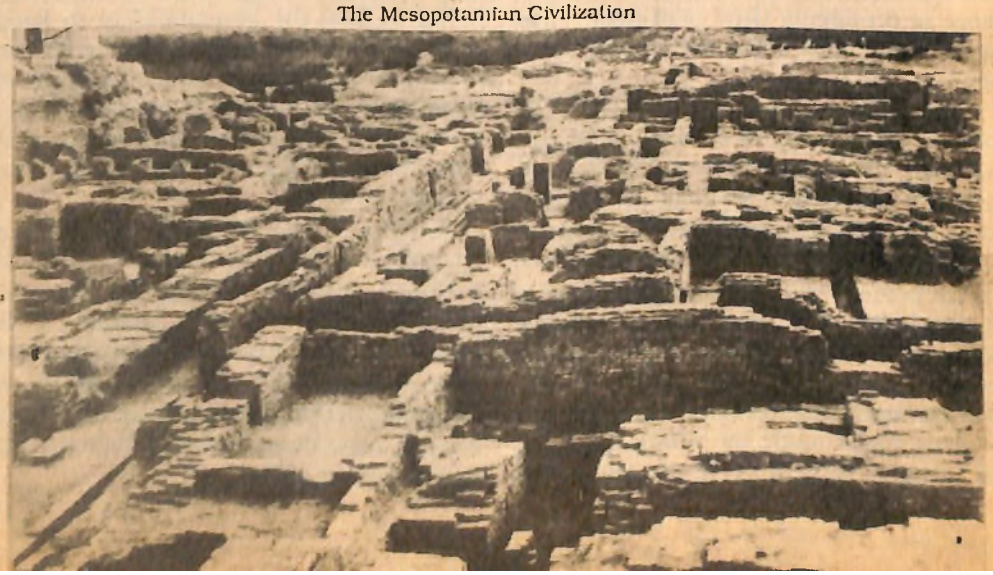
The Harappan culture is not the oldest of the Bronze Age civilizations. It is being described here first because it is the first known civilization in India. It seems to have flourished about 2500 B.C. and extended over a bigger area than any of the contemporary civilizations. The map shows its approximate boundaries. Evidences of this civilization are found in Baluchistan, Sind, Punjab, Haryana, Gujarat, Rajasthan and Western Uttar Pradesh.

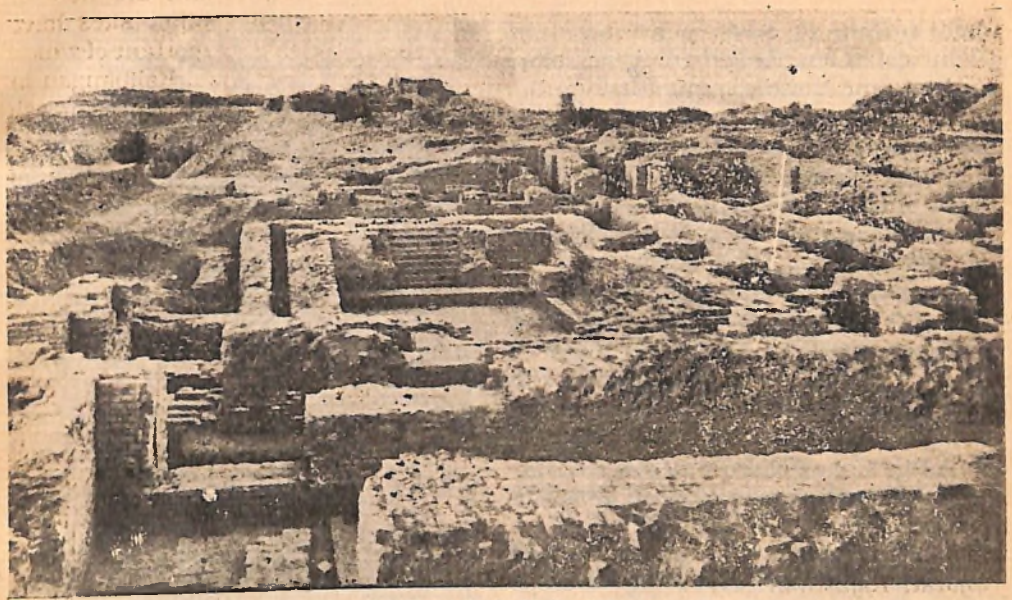
The existence of this civilization was revealed in the 1920's. This discovery at once pushed back the history of India by at least a thousand years. The first sites of this civilization discovered were Harappa in the Punjab and Mohenjodaro in Sind. Both these sites are now in Pakistan. Since then, other sites have been found, the most important of which are Rupar in the Punjab, Kalibangan in Rajasthan, Lothal in Gujarat and Banavali in Haryana.

Scholars are not agreed on how this civilization began; however, there is evidence of earlier agricultural

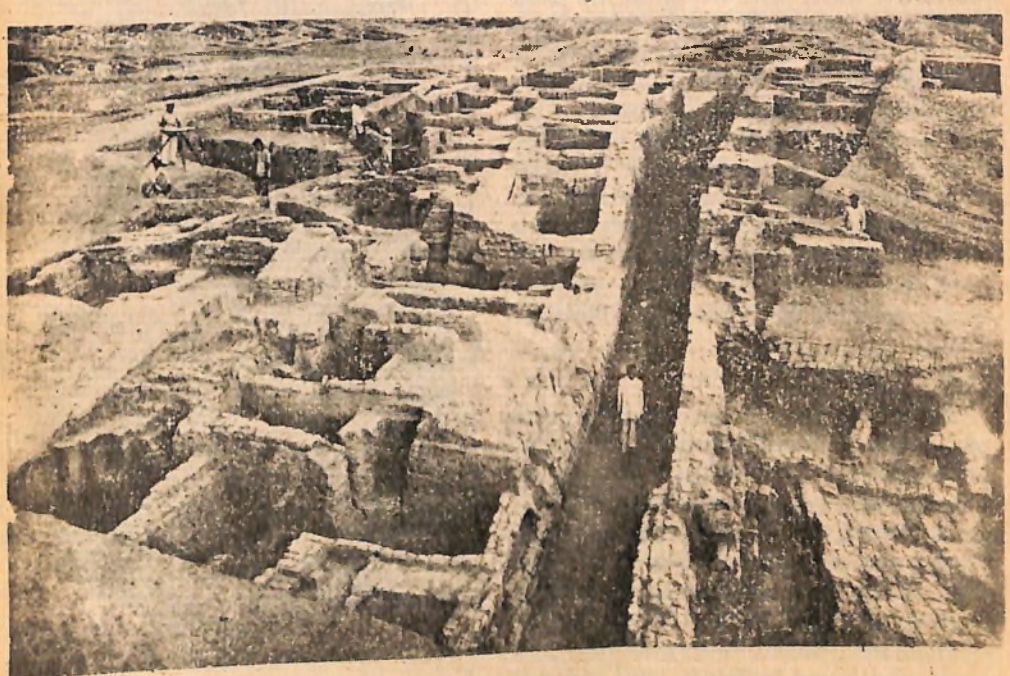
The Harappan Culture

2.1 Remains of houses in Mohenjodaro
The Mesopotamian Civilization





2.2 Great Bath, Mohenjodaro



2.3 A view of remains of houses in Kalibangan, Rajasthan

communities in some areas such as Baluchistan and Rajasthan. It may have evolved from these communities.

Cities of the Harappan Culture

Harappa and Mohenjodaro were well planned and thickly populated. The roads were straight and wide and cut each other at right angles. The main road in Mohenjodaro was about 10 metres wide and 800 metres long. The houses were situated along the roads and made of burnt bricks; some had more than one storey. Every house was furnished with a well and a bathroom. The drainage system found in Mohenjodaro was magnificent, and the house drains emptied all waste water into the street drains.

In Mohenjodaro a great tank, now called the Great Bath, was found. A flight of steps led to the water and all round the tank were small rooms. In Harappa has been found what is now known as the Citadel. It stood on raised ground and contained structures that seem to have been public buildings. Most of the cities had huge granaries, perhaps to store grain from the countryside. Lothal had a structure which according to some archaeologists, was a dockyard. This indicates that Lothal may have been an important trading centre to which even foreign boats used to come.

Life of the People

The occupations followed by the people of the Harappan culture are not definitely known. Most of the people, however, were farmers, who lived beyond the walls of the cities. They grew wheat, barley and peas. Cotton was also cultivated and probably cotton fabric was common. Fish seems to have been caught for food. Domesticated animals included humped and humpless cattle, goats and buffaloes, and possibly elephants. But it appears that the horse was not used on any significant scale.

The Harappan pottery was made on the wheel, a sign of an advanced culture. Some fine specimens of pottery have been discovered. These reveal the high artistic achievements of the Harappan potters. The variety of shapes and sizes is amazing. A large variety of clay toys have been dug up in the various sites of the Harappan culture. Models of carts with wheels, and animals yoked to them, and of birds with

2.4 Painted Pottery, Lothal

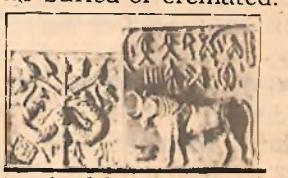
long stick-like legs, figures with moveable arms, and clay bulls with nodding heads have been found.

The people used metals for their implements and utensils. They also used the earthen pots of various shapes and sizes that they turned out on the potter's wheel. The bronze figure of a dancing girl found at Mohenjodaro is a wonderful example of their workmanship. Archaeologists have discovered hundreds of seals decorated with beautiful figures of animals, such as the bull, rhinoceros, tiger and elephant.

Various objects of Harappan culture like beads, a golden monkey on a pin, and seals have been recovered in Mesopotamia. These findings reveal that there was a direct trade link between the Indus civilization and Mesopotamia. There is no written evidence to explain the nature of merchandise, or the exact traffic arrangements. To avoid the difficulties of overland routes, trade was carried on by sea, Dilmun or modern Bahrein being the great centre of exchange between the Indus Valley and Mesopotamia. We infer that the Harappan traders took pottery, grains, cotton goods, spices, stone beads, pearls and eye-paint and brought back metalwares . We can visualize small boats as depicted in the Harappan seals, sailing along the coasts of the Arabian Sea and the Persian Gulf.

It is obvious that the Indus people had an efficient government but the present state of our knowledge does not tell us much about it. Some scholars think that since no palaces have been discovered, the cities had no kings, and that a body of important men managed government affairs.

Not much is known about the religion of these people. A large number of seals depicts the humped bull which may have been considered sacred. The impression of a god-like being on a seal is believed to be an early form of the Hindu god, Siva. Small figures of a goddess have been found. The Great Bath in Mohenjodaro might have been a place of religious bathing. The dead were either buried or cremated.



2.5 Seals of the Harappan culture.

The seals unearthed are the most distinctive products of the Harappan culture. Some of them are square tablets of clay, with boss on one side and engraving on the other. After cutting they were glazed over. Animals, such as the bull, rhino, tiger, elephant and crocodile, have been engraved very vividly and beautifully. Some of the seals have inscriptions, but the script has not yet been deciphered. The extraordinary skill in moulding the animal figures with minute details is very impressive. What were these seals used for? There is no definite answer to this question.

End of the Harappan Culture

By 1500 B.C., the Harappan culture came to an end. How or why, is not known. Among the various causes ascribed to the end of the Harappan culture are floods, gradual decay of the culture and the arrival of a new people, the Aryans. However, there is no unanimity among scholars on this question.

The Harappan culture must have been a glorious one. After the coming of the Aryans, the cities were deserted and became only mounds to be unearthed

about 3500 years later. India was not to see such magnificent cities for a thousand years. Town-planning seems to have been completely forgotten. However, some aspects of the beliefs and practices of the Harappan people lived on. The worship of Siva and the mother goddess and the practice of religious bathing are examples of continuing traditions of the Harappan culture.

In many parts of India, the Neolithic phase was followed by the emergence of Chalcolithic (copper-stone) cultures. A number of sites of these cultures have been found in Rajasthan, Madhya Pradesh, Maharashtra and eastern India. Though most of these cultures belong to a period after that of the Harappan culture, they were much less advanced than the Harappan culture. They neither had any cities nor systems of writing. The use of iron which began in India in about 1000 B.C. brought about many changes in the life of the Indian people and helped in the growth of Indian civilization.

THE MESOPOTAMIAN CIVILIZATION

Though the Harappan culture is nearer home, the Mesopotamian is older. In several aspects of life, Mesopotamia (modern Iraq) led the way and other civilizations followed.

Mesopotamia means the 'land between the rivers'. It is watered by the Tigris and Euphrates rivers. Its southernmost region was, in ancient days, called Sumer. The regions to the north-east of Sumer were called Babylonia and Akkad. The highland in the north was Assyria. The Mesopotamians devised ways and means of a perennial irrigation system to keep the floods in check. The river-bed was high and the canals they made were very wide (25 metres in width sometimes) so that

while the water rushed from the river to the canal, the banks would not be destroyed. The canals were navigable channels and thus helped in transport as well as in irrigation.

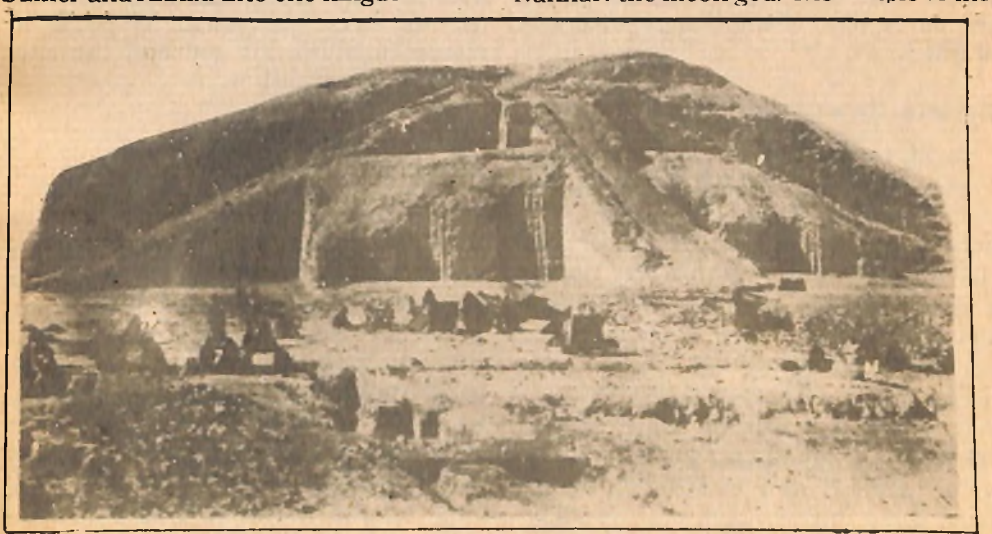
The Rise and Fall of Mesopotamian States

By about 3000 B.C., the Sumerian civilization had reached a high level of achievement. The cities in the region appear to have started as centres for the control of irrigation in the area and soon became centres of commerce and industry also. The most important of these cities were Erech, Eridu, Lagash, and Ur. Each was the capital of a small state, and the pattern of their cultures was similar. They were always fighting among themselves. By about 2600 B.C. the kings of Ur had become powerful and their influence spread to other regions also.

The people of Akkad had adopted many Sumerian ways and much of that culture. About 2500 B.C. a strong king combined Sumer and Akkad into one kingdom with its capital at Agade. Within about a hundred years, however, this kingdom was destroyed by invaders. The next notable event in the history of Mesopotamia is the rule of a new dynasty at Babylon. Hammurabi, the greatest Babylonian ruler, united the whole of what is now called Iraq into a single kingdom. By 1600 B.C. this kingdom was also destroyed, this time by the Hittites who came from Asia Minor, now Turkey. The Hittites were the first to make regular use of horses for war chariots and to make iron implements.

Mesopotamian Cities

The excavations at Ur, one of the greatest cities of Mesopotamia, reveal a complete picture of the city-state. It was divided into three main divisions : the sacred area, the walled city on the mound and the outer town. Every city had a patron-god of its own. The god of Ur was Nannar, the moon god. The temple of the



2.6. Remains of the Ziggurat at Ur

god, called *ziggurat* meaning the 'Hill of Heaven', was built of bricks on an artificial hill in the sacred area. The ziggurat in Ur was more than 20 metres high and in three storeys. The sacred area was also an administrative centre, and storehouses and offices have been found there. The ziggurat could be seen for miles around and all the citizens who lived in and around the city were aware of the 'divine presence' on the hill above them. The walled city and the outer town were the residential areas of the city.

Social Classes in Mesopotamia

In Mesopotamia, the king was regarded as the god's representative on earth, and the priests occupied the next place of importance. It is usually supposed that the priests were the rulers of the cities before there were kings. The kings' officers and scribes came next in the social scale. Merchants, landowners, craftsmen and shopkeepers formed the middle class. The lowest in the social level, of course, were the slaves, most of whom were prisoners of war.

Hammurabi's Code of Law

As life became more complex laws had to be made, added and changed to regulate the people's activities. Hammurabi gave his people a code or a system of laws. His code covered every aspect of life. It made a crime against one citizen, a crime against the whole state and the state fixed punishment for the offender. The code also recognized the division of society into rich men, poor men and slaves, and prescribed different punishments for different classes for the same crimes. Punishments were more severe if the victims of the crime belonged to the upper classes than if they were slaves of poor men. Hammurabi's famous edict shows him standing in reverence before his god and the laws written underneath it.

2.7 Hummurabi's Code depicted on stone

Mesopotamian Religious Beliefs and Practices

The Mesopotamians believed in a number of gods, but, each city had one special god as its patron. Rent from the land was collected and all government regulations were carried on in his name. His temple was maintained on a lavish scale and naturally the priests of this god came to enjoy wide powers.

As was common in ancient times, people believed in a kind of life after death. That is why they put food and other necessities of daily life into graves. This

practice appears to have been discontinued in Sumer and the dead were buried in the backyard of the houses. This has led scholars to think that the dead were thus looked upon as protectors of families and perhaps also worshipped in the home.

Occupations, Arts and Crafts in Mesopotamia

Agriculture was the occupation of most Mesopotamians. Before metals were used on a large scale, they had sickles of baked clay. These were baked hard and did not break easily. To ensure a permanent supply of water for the fields, the people diverted flood waters through canals to big reservoirs. They used cattle to draw the plough and took care to improve the livestock.

Mesopotamians usually wore clothes made of sheepskin. They also grew flax for linen and the cloth-making industry was carried on by a special class of workers-spinners, weavers and dyers.

A vast hoard of metal objects has been discovered in the royal cemetery at Ur. They include statues which adorned the temples of gods, vessels and ornaments of gold and silver, silver harps, golden helmets, beautifully inlaid furniture, exquisitely designed necklaces, bracelets, and other jewellery. This shows that, by 2500 B.C., metal workers had developed very high technical knowledge and skill.

The potter's wheel was perhaps first used in Mesopotamia. Before it was used, pottery was made by hand. But, Mesopotamian pottery is not as good as the Harappan pottery. The Mesopotamians also seem to have been the first to make glassware.

Trade and Commerce

The prosperity of the Mesopotamians depended largely on foreign trade. The people had to get raw materials from outside, then they made goods and sold them both at home and abroad. The raw materials they imported included stone and timber of good quality and gold, silver and other metals. For these they exchanged their surplus foodgrains.

Two things are essential for a country that depends even partly on trade and manufactured goods. First, it must see that manufactured goods are of high quality. So the kings and governors of the Mesopotamian city-states always supervised the production of goods and made rules so that all dealings would be fair. Secondly, a trading community should have good modes of transport to carry its products. For transportation on land, Mesopotamia had wheeled carts. Its

2.8 A Sumerian chariot drawn by wild asses

rivers and the many canals that had been dug for irrigation provided fine waterways. *Keleks*—rafts of logs tied together and buoyed up by inflated skins—were used to carry goods on water. There was extensive trading between the civilizations of Harappa and Mesopotamia.

Cuneiform Script

The first writing of the Mesopotamians was developed in Sumer and was in the form of pictograms— signs, symbols and pictures which denoted objects. Once the standard sign or picture was recognized as representing a definite object, communication became easy. However, a purely pictographic script is not of much help when ideas rather than objects are to be communicated. The Sumerians solved this difficulty by using certain pictures or signs to represent certain ideas—for example, the weight or volume of a thing. These symbols stood for ideas, names and words. They further developed their system of writing by making the script phonetic, that is, making the symbols represent syllables and sounds of a word. These symbols could then be combined in innumerable ways to represent objects, ideas and sounds.

2.9 Cuneiform Script a. Writing with a stylus b. Early Sumerian script c. Tablet showing cuneiform script

The Sumerians were the first to evolve a proper system of writing called *cuneiform*. The script is wedge-shaped, as shown in the illustration. They wrote with a sharp stylus made of reed on the smooth surface of clay tablets. The tablets were then baked until they became hard. Each tablet was like the page of a book. A large number of these tablets have been found. Most of them are business documents—letters, deeds of sale, contracts. Royal inscriptions and religious texts form another type of documents, but they are fewer.

It is interesting to know how the cuneiform script was deciphered. Henry Rawlinson, a British officer in Iran, was determined to read cuneiform. He discovered by chance an inscription, known as the Behistun Inscription, on a high rock. The inscription was at a height of about 100 metres and was very difficult to reach. But this did not stop Rawlinson. Every morning he used to go up on the rock, spend the whole day copying the inscription, and come down in the

evening. It took him several days to copy out the complete inscription. He then worked at it for twelve years before he succeeded in finding a key to the script. The ability to read the script, together with archaeological finds, has greatly enriched our knowledge of the Mesopotamian civilization.

The story of deciphering the lost scripts is a very interesting one, and it has been possible to read some of them only after scholars have patiently and tirelessly worked for years. However, some scripts as that of the Harappan culture remain undeciphered.

Growth in Knowledge

The people in Mesopotamia counted by sixties as we count by tens. Ours is the decimal system; their system was *sexagesimal*. They wrote the numbers 1 to 9 by making the sign for 1 and repeating it as many times as necessary. Similarly, they repeated the sign for 10 to represent multiples of 10. They had the same symbol for 60 as for 1, though it was written much bigger. When they had to write, for example, 153, they wrote 60 twice, 10 three times, and 1 three times. They also had a multiplication table of a sort. Their sexagesimal system of counting is no longer in use but we still use it as the basis of division of time into minutes and seconds and of a circle into 360 degrees. In geometry, the Mesopotamians had discovered what was later called the Pythagoras' theorem. This was of great help to Mesopotamians in building and in computing distances.

In astronomy, the Mesopotamians made astonishing progress. They could calculate the length of the day and the night, and the rising and setting of the sun and the moon. They divided the whole day into 24 hours, a time system followed all over the world. They divided the sky into twelve parts and assigned each a name. This has come down to us as the twelve signs of the *zodiac* or *rashis*, as we call them in India.

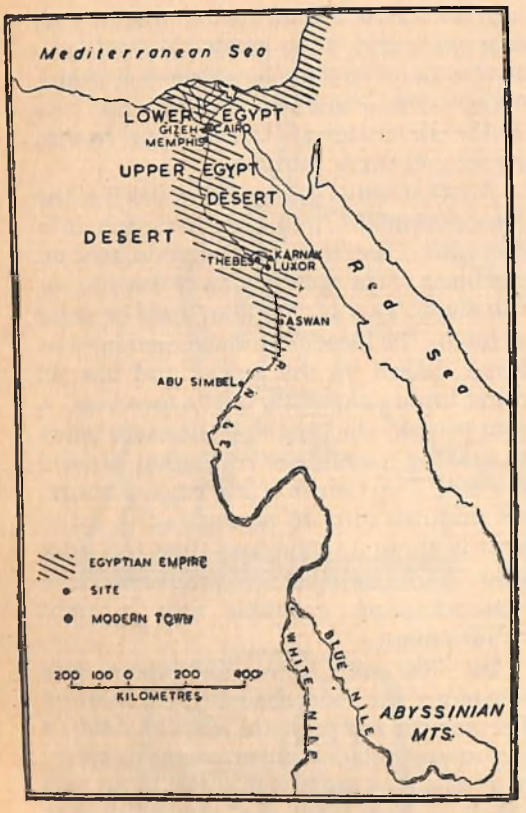
Another remarkable achievement of the Mesopotamians was the invention of a calendar. Calendars can be calculated on the basis of the movements of the sun, or the moon. That is calendars may be *solar* or *lunar*. The Mesopotamian calendar was lunar, based on the moon, and like all other lunar calendars, it was incorrect. A year is really the time that the earth takes in making a complete revolution around the sun. This time is of 365 days, 5 hours, 48 minutes and 46 seconds. The lunar year is about 11 days less than the solar year. But, in spite of this error, the Mesopotamian calendar was a great achievement.

By 750 B.C. there had come into existence the Assyrian empire. Nineveh became the finest city in western Asia—a city of vast palaces and imposing temples. The Assyrian greatness came to an end when nomads from the north and east destroyed Nineveh in the 7th and 6th centuries B.C.

THE EGYPTIAN CIVILIZATION

Egypt is called the 'Gift of the Nile'. Only a narrow strip of land along this river is green and fertile. It is in this area that civilization in Egypt emerged and grew.

Historians divide the history of Egypt into three periods : the *Old Kingdom*, the *Middle Kingdom* and the *New Kingdom*. The Old Kingdom is also called the Age of the Pyramids. During this period, Memphis, situated near modern



The Egyptian Civilization.
The map shows the approximate extent of the Egyptian empire in the 15th Century B.C.

Cairo, was the capital. The civilization of Egypt with its advances in art, religion, and sciences was developed during the period 3000-2000 B.C. and during the Middle Kingdom (2000-1750 B.C.). But in the 18th century B.C., Egypt was overrun by invaders called the Hyksos, who came from the east. They were a nomadic people and their culture was far less advanced than the Egyptian. Their rule was short; soon the Egyptian kings regained their land, and the New Kingdom was founded.

Egypt's Social Classes—Pharaoh to Slave

The Egyptian king was called the *pharaoh*. He had absolute powers. The land belonged to him and his word was law. He was also looked upon as god and his statues were put in temples. His deeds and victories were inscribed on temple walls. Next to the pharaoh came priests, officials, artists and craftsmen. Below these people were the farmers who lived beyond the cities and then came the slaves who were generally prisoners of war and owned by the king.

Occupations, Arts and Crafts in Ancient Egypt

Agriculture was the most important occupation of the people. The rivers fertilized the land every year, and the people worked together to build canals to make it possible to grow crops all the year round. They appear to have used oxen to draw the plough as early as 3000 B.C.

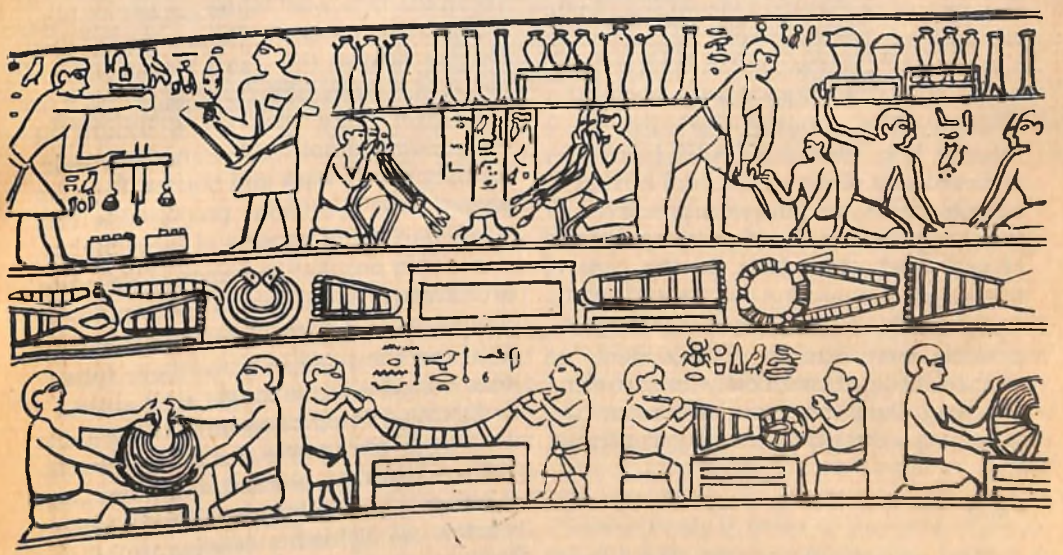
Like the people of other early civilizations, the Egyptians domesticated animals. Goats, dogs, asses, pigs and geese were common. They seem to have had camels also. The horse was brought to Egypt by the Hyksos and was used to draw war chariots.

Flax was grown in plenty in Egypt. While the Mesopotamians wore woollen clothes, the Egyptians had linen garments, much more suitable to the climatic conditions. Egyptians made beautiful stone vases which they exported. Like the Mesopotamians, they also developed the art of making glass and produced glassware of graceful shapes. Carpenters made beautiful furniture inlaid with ivory and precious stones,

2.10 Panel showing Egyptian agriculture

which was well preserved in the royal tombs.

The lavish life of the Egyptians required such luxury products as incense, oil, silver, timber for building and other things which had to be brought from foreign countries. Transport of goods overland was done on pack asses. The Nile was used as a waterway. The Egyptians also had sea-going ships which were used both in war and for peaceful purposes.



2.11 Panel showing Egyptian metal workers at work

Religion

The Egyptians believed that there was a power behind every phenomenon of nature, but the sun was their most important god, worshipped under different names as the creator of all things Other Egyptian gods were the king of the other world, god of the floods, and the moon god. There were also local gods, sometimes represented by symbols, such as the hawk, crocodile, jackal and cow. These were probably clan totems in some distant past. Priests do not appear to have played an important part in Egyptian religion.

The Egyptians firmly believed in life after death. When a man is alive, they thought, he has a body and a soul. While other people believed that after death, the body perishes and the soul lives, the Egyptians believed that both the body and the soul live though in a different way. So they took great care in preserving the body of the dead. The body was embalmed in spices and then wrapped in strips of fine linen. Such a preserved body is called a mummy. The mummy was put in a wooden box, decorated with paintings, enclosed in a stone coffin, and buried in a tomb. Inside the tomb were preserved all the things that the dead person was fond of and used when alive. In the case of kings and queens, the coffins and tombs were costly while those of ordinary persons were simple. Things such as clothes, foods, drinks, costly furniture and jewellery were kept in the tombs. The pyramids were the tombs of great kings.

Egyptian Architecture and Sculpture

The pyramids were the most remarkable Egyptian buildings in the early period. Still remaining as achievements of those years are 30 large pyramids and a number of small ones. The most imposing of all is the Great Pyramid at Gizeh near Cairo. It was built about 2650 B.C. by the Pharaoh Cheops (Khufu) of the Old Kingdom. According to Herodotus, the great ancient Greek historian, 300,000 men worked for twenty years to complete this structure which is made of huge blocks of stone. These blocks were cut into shape and rolled up a slope and fitted together skilfully and carefully. This required an amazing degree of engineering skill. The Great Pyramid undoubtedly deserves its place among the seven wonders of the ancient world.

Since the pyramids were the tombs of *pharaohs*, they contained the *mummies* of these monarchs and also all kinds of precious things they used. Many of the pyramids were robbed through the centuries, but the tomb of king Tutankhamen was found intact in the 1920's. The treasures of this tomb can now be seen in the Cairo Museum. The pyramid walls contain a large number of paintings. They give us a wealth of information about the lives of the people, for they depict wars and battles, hunting scenes and sacrificial processions and numerous other aspects of everyday life.

Another peculiar specimen of Egyptian architecture is the sphinx. The sphinx is a mythological animal with the body of a lion and the head of man. Each sphinx was carved out of a single solid stone.

Egyptian temples are also remarkable buildings. The temple at Karnak, lavishly adorned with statues and sculptures, has a hall of 130 impressive columns and an avenue of sphinxes leading from the temple to the river. Another famous temple is the great temple of Abu Simbel, cut out of sandstone of cliffs. There was a

2.12 The Pyramid at Gizeh

series of halls in the interior of the temple which was dug into solid rock for about 60 metres. The temple was dedicated to the sun god. A most remarkable feature of the temple was that the rays of the rising sun shone into the temple, and so it has been called the 'temple of the rising sun'.

Both Karnak and Abu Simbel stood on the banks of the Nile. In the 1950's, a high dam began to be built at Aswan. It became clear that with the completion of the dam, Abu Simbel would be submerged under the water of the Nile. Unesco, therefore, launched a scheme for saving these monuments by international effort. A number of archaeological teams from many countries of the world, including India, were engaged in 'lifting' the monuments in order to preserve them. In India, you may recall, the monuments at Nagarjunakonda were similarly saved when the Nagarjunasagar was built.

2.13 The Great Temple of Abu Simbel

Hieroglyphic Script

The Egyptians perhaps learned the idea of writing from the Sumerians before 3000 B.C., but their writing is not a copy of cuneiform. The Egyptian script is known as *Hieroglyphic*, which means 'sacred writing'. It consisted of 24 signs, each of which stood for a single consonant. Vowels were not written. Later, the Egyptians started using symbols for ideas and the total number of signs rose to about 500. The importance of writing was soon recognized and, as in Sumer, writing became a specialized art. The writers, who constituted an important section of society, wrote with reed pens on the leaves of a plant called *papyrus* from which we get the word 'paper'.

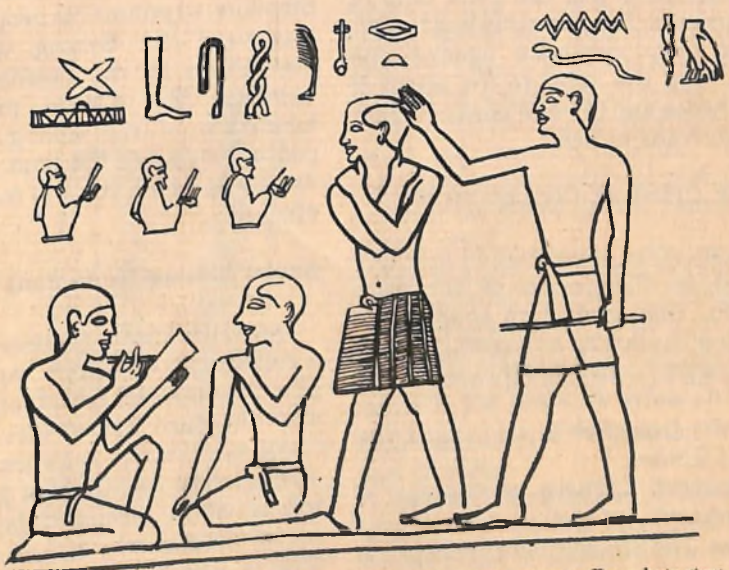
How the hieroglyphic script was deciphered is a fascinating story as it was in the case of the cuneiform. Napoleon, the famous French conqueror, invaded Egypt in 1798. He had with him a number of scholars. They discovered a stone—now the famous Rosetta Stone—near the

mouth of the Nile. It had on it an inscription in three languages—hieroglyphic, demotic, another popular script of the ancient Egyptians, and Greek. After much patient labour, Champollion (1790-1832), the great French decipherer, succeeded in deciphering the entire Egyptian alphabet. This discovery, like that of the Behustun inscription in the case of the Sumerian script,opened new doors for understanding the Egyptian civilization.

Mathematics and Science in Ancient Egypt

The Egyptians made significant advances in many fields of knowledge. They developed a decimal system of numeration. Numbers from 1 to 9 were represented by one sign repeated to give a desired number. For 10 and its multiples, there were different signs. There were separate symbols for 1, 10, 100 and so on. To write 153, the symbol for 100 was written once, for 10 five times, and for one thrice. Additions and substractions were easy in this system. The Egyptians could also calculate the area of a triangle or a rectangle.

The crowning achievement of the Egyptians was the solar calendar. Almost all early people, like the Sumerians, formulated their calendars on the basis of lunar months. But this is not helpful for an agricultural people who require an accurate knowledge of seasons and rains and floods for their agricultural operations. After years of observation, the Egyptians found out that the average length of the period between two floods was 365 days. They also observed that a very bright star, Sirius, was the last to appear on the horizon when the flood



2.14 The panel taken from a tomb of the Old Kingdom shows an officer bringing a slave to the scribes

reached Cairo, and that this happened after every 365 days.

These two independent observations led the Egyptians to conclude that the year had 365 days. The year was then divided into 12 months each of 30 days. The extra five days were set apart for the celebration of religious festivals. However, the solar year actually consists of about 365 1/4 days. Therefore over a period of time, a calendar based on a year of 365 days was bound to prove wrong. Perhaps the Egyptians realized this, but, by then, custom had established the previous calendar so firmly that they did not change it. Still the Egyptian solar calendar was a great achievement.

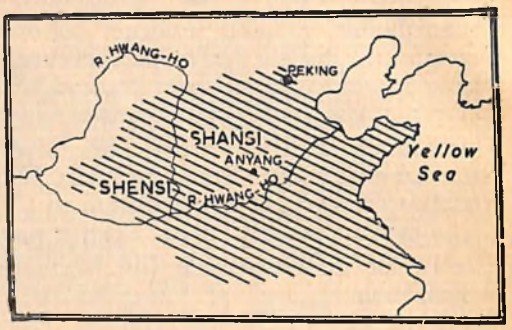
The Egyptians' practice of preserving the bodies of the dead by embalming was a stimulus to science. It added to the knowledge of the structure of the human body, and to the skill in surgery.

By about 1000 B.C. the great days of Egypt were over. The pharaohs had to fight for their very existence against the invaders from the areas to the south of Egypt in Africa and the new powers across the Mediterranean Sea.

THE CHINESE CIVILIZATION

The first centre of civilization in China developed in the region of the river Hwang-Ho. This river often changed its course after the floods. As a result, homes and fields were flooded and the canals dug to carry the water were put out of order. That is why this river is also called 'the Sorrow of China'.

The earliest Chinese civilization of which archaeologists tell us is the Shang civilization. The Shang rulers are believed to have been in power from 1765 to 1122 B.C. According to archaeological evidence,



The Shang Civilization

by the 14th century B.C. the Shang people had developed a high level of culture, comparable to the centres of the other early civilizations. The neighbours of the Shang people appear to have been much behind them in culture. One of the primary duties of the Shang king was, therefore, to protect his people from them. However, the Shang dynasty was overthrown by the neighbouring Chou dynasty. The Chous preserved the excellence of the Shang culture and continued to rule the land till about 250 B.C. about which you will read in the next chapter.

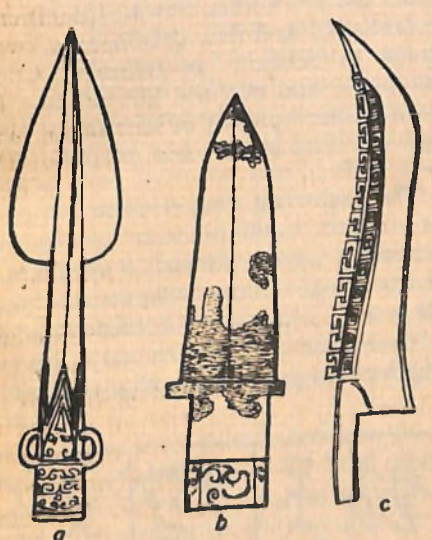
Social Classes in Ancient China

Below the king in Chinese society came a number of noblemen. Apparently the king distributed lands among the nobles, who in return helped him in wars and conquests. Some scholars regard this arrangement as a kind of *feudal system* which will be discussed later. The next social class of importance was perhaps that of merchants and craftsmen. The bulk of the population was composed of farmers, and at the lowest end stood the

slaves, who were, as in other cultures of the time, prisoners of war. The Shang kings spent considerable time in wars and conquests. They, therefore, needed a good army, and soldiers occupied a place of importance in society. The soldiers wore bronze helmets and a metal body armour. Bronze daggers, axes, bows and metal tipped arrows have been discovered.

Occupations, Arts and Crafts in Ancient China

As in the other three cultures, the prosperity of the Shang people depended on agriculture. Millet was the main cereal cultivated. Wheat was introduced later. The Shang people came to cultivate rice also on a large scale. The Chinese worked out an elaborate system of irrigation, which reduced the distress caused by floods.



2.15 Bronze weapons and implements a. spearhead b. Dagger-axe c. Knife

2.16 A bronze wine vessel with animal motifs

From very early days the Chinese wore linen clothing. There is evidence that the Shang people also used silk. Breeding of silkworms was begun, and silk production became an important Chinese industry.

The Chinese made very fine pottery which they learned to glaze. They also learned to make dishes of porcelain. We still call porcelain dishes *chinaware*, or simply *china*.

The specimens of metal work that have been found tell us that the Chinese metal worker was a master of his craft. Some of the bronze articles of the Shang period are superior to many produced later.

Chinese Ancestor Worship and Oracles

Ancestor worship was the most popular practice of the ancient Chinese. They believed that death transformed a mortal

into a spirit and that the spirit possessed great powers. The dead person was wrapped in matting for burial in a grave. Furniture, pottery, bronze vessels, and other objects were placed with the dead body. The tombs of the kings were spacious and the tomb chamber was of finely carved wood. This reminds us of the Egyptian burial customs.

The gods worshipped were, as in other civilizations, the forces of nature. But the Chinese also believed in a chief god, who was called 'The Ruler Above'. People wanted to know what would happen to them in the future; they wanted the gods to tell them what to do and how to act so that they could gain their end. So they approached a priest or a holy person who was supposed to be in close touch with the gods. Thus developed the practice of consulting *oracles*.

The questioner used to ask the oracle a number of questions. The oracle procured polished tortoise shells or bones of cattle and made small holes in them. When fire was applied to the hole, the bone cracked and the answers were inferred from the nature of the cracks. The oracles naturally gained great prestige in society.

Chinese Script

It is generally thought that the Chinese script was originally derived from the Sumerian. It started as a pictographic script, that is, a picture standing for a word, but it was independently developed as an ideographic script in which a sign represents an idea. It is remarkable that the Chinese script has changed very little since the earliest times. Writing became an art and the same techniques were followed every where. Writers wrote on silk or bamboo slips with a brush.

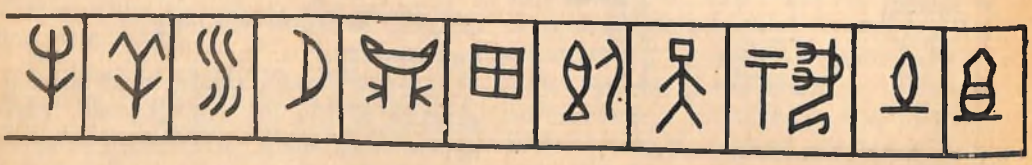
The Chinese Solar-Lunar Calendar

The Chinese calendar was a combination of solar and lunar calculations. The months were lunar and consisted of 29 or 30 days, but the length of the year was correctly calculated as $365^1/_4$ days. The Chinese scholars seem to have made one other unique advance in astronomy. It appears that they could correctly foretell lunar eclipses.

The achievements of the Shang civilization were continued and spread to other parts of China. New kingdoms were established and new developments took place in religion, government, social, economic and cultural life, science and many other spheres of life. About these you will read in the next chapter.

The beginning of all *civilized* living can be traced back to the civilizations described above. Hence they mark a distinct stage in the development of man's life and the beginning of recorded history.

Each civilization developed in its own way with its own unique character. All of



2.17 Some signs of the Chinese script of the Shang Civilization

them, however, had certain common characteristics. The rise of cities and states is a characteristic feature of civilization and it is found in all the four cultures. The term 'state' implies a defined area with a government which makes and enforces laws over all the people living within the borders of that state.

States came into existence only after human societies had reached a certain stage of development. To begin with, these states were small; in course of time, they became larger. A state was usually ruled by a king, who had a number of officials to assist him. States also had their armies of professional soldiers, which helped the kings in enforcing their will over the people. The knowledge of metals brought into use new and better weapons—for defence against foreign invaders, for waging wars on neighbouring states and for enforcing laws within the state.

In prehistoric times, when man had barely enough food to live on, there were no differences between man and man. Everyone performed more or less the same type of work and lived in more or less the same way. With the rise of civilizations, social classes arose. Different groups of people performed different types of work and lived differently. There were upper classes and lower classes. The rights of the people differed according to the class to which they belonged. The laws made by the state gave different rights to different people.

It has been mentioned earlier that excavations of the Neolithic sites have not revealed the prevalence of a higher status for some members of the community. With the rise of civilizations, however, inequalities emerged. The common people—the peasants and artisans—enjoyed a very low economic status. Even the law codes reflected these inequalities. Many people were made slaves. All these people who produced all the things, whether it was food or cloth or other manufactures, did not enjoy all the fruits of their labour. A large part of what they produced was taken over by the rulers, the priests and the officials.

The armies that the rulers had were used not only to provide security to the people from invasions and to wage wars against others but also to keep the people under subjugation. The inequalities in society can be seen from the remains of the buildings and monuments of these civilizations. There were huge palatial buildings for the rulers, merchants and big officials; the common people lived in slum-like houses. These differences in the houses for the rulers and other upper classes and for the common people can be seen in all these civilizations.

The rise of classes was accompanied by a growing division of labour. People freed from producing food, specialized in various arts and crafts. Thus many new skills developed that required a high degree of training. Metallurgy required techniques like smelting and casting. With the invention of the potter's wheel, pottery became a large-scale industry. Similarly, many advances were made in textile manufacture and other industries. Diversification and specialization of work was true of all the civilizations.

The rise of civilizations marks the beginning of systematic knowledge about the world. Each civilization made its contribution to mathematics, astronomy and other sciences. The script which each civilization developed constituted a revolutionary advance in human knowledge. Now ideas could be put down

and transmitted to a far larger number of people than was possible earlier. The record that these scripts have given us is invaluable for understanding these early civilizations. These civilizations also developed religious ideas in a more systematic way.

Trade within a state and with others is another common characteristic of the four civilizations. Trade, in fact was a necessary requirement for their growth because no civliization could produce all that it needed. For this, the means of transport—by water and land were improved. With the invention of the wheel and its application to transport, the primitive sledge was converted into a cart and chariot. However, in the absence of roads, pack animals were the most important means of transport on land.

Equally important in these civilizations was the movement of ideas. Knowledge of techniques developed at one place often spread to other areas. It is difficult to know the exact origin of ideas because an idea borrowed from one civilization was adapted and developed to suit local needs. All contributed to the foundations on which other civilizations developed later in other parts of the world.

EXERCISE

Things to know

1. To what extent were the conditions of nature responsible for the development of civilization in river valleys ?
2. In what ways were the Bronze Age civilizations similar ?
3. Cite evidences to show that Bronze Age civilizations were well advanced over the Neolithic cultures.
4. With which of the four civilizations, and in what way, do you associate each of the following terms ?
   Oracle, silk, Behistun Inscription, Great Bath, mummies, ziggurat, Babylon, seals sexagesimal system, sphinx, Hammurabi.
5. Why was it natural for the people to concern themselves with calendars? In what respects did the calendars of the early civilizations differ ?
6. Describe the scripts used by the Mesopotamians, Egyptians and Chinese.
7. Why are we less sure about many details of the Harappan culture than about the civilizations of the Nile or Tigris-Euphrates ?
8. Why do we feel sure there was trade among the people of the early civilizations ?

Things to do

1. Collect or sketch pictures to show the most significant achievements of each of the four early civilizations for a large wall chart in four parts.
2. Write a paper entitled 'Religious Beliefs in the Early Civilizations'. Point out similarities and differences and explain what religious practices were common in the four civilizations, and why.

Things to think about and discuss

1. Do you think it was worth while to save Abu Simbel? Why, or why not ?
2. What reasons can you think of that might explain why the ability to read hieroglyphic and cuneiform writing was 'lost to the world' for so long ?
3. Discuss reasons why the societies of the early civilizations were divided into classes.
4. Make a comparative study of the life in the Stone Age and the Bronze Age civilizations.

CHAPTER 3

Early Iron Age Civilizations

(1200 B.C.—A.D. 600)

YOU have probably already noted that the first civilizations about which you have just read were all in the eastern part of the world. When these civilizations were flourishing, most of the people in the western world were far less advanced. Around the beginning of the first millennium B.C., civilization expanded to other areas in the East. At the same time, in the lands around the Mediterranean Sea also civilizations began to develop rapidly.

Discovery of Iron

The civilizations that you have read about in Chapter 2 made use of copper and its alloy, bronze, for making tools and implements. Hence these civilizations are called Bronze Age civilizations. They emerged in areas where clearing of jungles on a large scale for purposes of cultivation was not required and the soil could be easily worked. The next major advance in the history of mankind occurred with the discovery and use of iron. Iron is harder than copper and bronze. It is also cheap and is available in plenty. Copper is comparatively a scarce metal found only in a few areas and is costly. The discovery of iron made it possible to make a variety of agricultural tools such as ploughshares, sickles, shovels and spades on a large scale. Axes made of iron also made it possible to fell trees and clear jungles on a large scale, thereby making more land available for cultivation. The effect of iron on other crafts also is of great importance as it helped in making a variety of tools and implements that could be used for specialized jobs. Archaeologists have found a variety of iron objects such as hammers, anvils, tongs, nails, chisels, saws and gouges, which indicate the wide variety of specialized jobs for which these objects could be used. The importance of iron weapons in warfare is also immense.

The use of iron was known to certain communities as early as about 2000 B.C. but it was only around 1400 B.C. that the secrets of iron forging were learned. The credit for employing techniques of iron-

making goes to the Hittites who lived in Asia Minor (Turkey). To them also goes the credit for the domestication of the horse, which was generally not known to the Bronze Age civilizations.

The Iron Age began in about 1200 B.C. when iron implements began to be used in Palestine, Syria, Turkey, Iraq and Greece. By about 500 B.C. it had spread to a large part of Europe.

In India, Iron Age began in about 1000 B.C. It is after this period that the plains of the Ganga-Yamuna Doab were settled on. It is believed that iron implements were used in clearing the thick jungles in the Gangetic plains and iron ploughshare was used for tilling the hard soil. The material remains of the early Iron Age in India do not indicate a high level of culture. However in the 6th century B.C. we find the establishment of many urban centres. Some of these later grew into powerful empires.

The discovery and use of iron facilitated the growth of civilization and its spread to many new areas of the world.

Early Iron Age Civilizations

The civilizations described in this chapter marked the beginning of the Iron Age; hence they are called the Iron Age civilizations. In this chapter you will learn first about the developments that took place in India and in China after the decline of the Harappan culture and the Shang civilization respectively. You will also read about the Iranian civilization which, during the first millennium B.C. developed into a large empire and which after its decline was again revived in the third century of the Christian era. The two ancient European civilizations that began to develop about 3000 years ago in Greece and Rome are also described here. These two civilizations had a deep impact on the pattern of future European culture.

Of course, the civilizations described in the following pages were influenced by other peoples and cultures but space permits a mention of only a few of them. For example, the civilization of the Hittites was a link between the West and the civilization of Egypt and Mesopotamia. The Phoenicians, centered in the present Lebanon, also carried their ideas West along with their trade. Their greatest contribution to the world was the development and spread of a script which was completely phonetic—an alphabet based on sounds rather than objects. The Phoenician alphabet, based on the older Egyptian and Mesopotamian scripts, consisted of 22 letters. It influenced the development of the Greek alphabet and of many other systems of writing.

The description of the civilizations selected for this chapter will enable you to understand man's continuing progress. Each of the civilizations, as you will see, was different from the others. Most of them advanced beyond the achievement of the first civilizations. Each contributed to the world's heritage—in art, literature, philosophy, science and government.

Probably, the greatest of all the achievements of the peoples discussed in this chapter was in the cultural field. The foundations of national cultures were laid. The scripts and languages they developed formed the basis of all modern languages. Literature became important for the first time in man's history, and the first great poems, histories, grammars, dramas and philosophies were written. Writing was used for self-expression and for communication of ideas—not merely for keeping state records. Philosophy and science became systematized as subjects

of study. In art and architecture new techniques led to beautiful creations. Most of the great religions of the world also developed in these civilizations. Because of their cultural achievements, these civilizations are directly linked with the entire course of human history.

You have seen how with the emergence of civilization, states had emerged. Each state had its own armies which were used to keep their subjects under control and to wage wars against others and conquer new areas. Some of the states mentioned in Chapter 2 had grown into empires. In the Iron Age, many states became big empires, much bigger than any in the earlier period. They maintained huge armies which were used to conquer more and more areas. Wars between states became a frequent occurrence. Different kinds of political systems emerged; such as republics, oilgarchies and monarchies. However. whatever the form of political system, the state served the interests of the rulers and ruling classes which had arisen with the emergence of civilization.

You have also seen that social inequalities had arisen with the rise of civilization. The social systems that prevailed in the civilizations described in this chapter were marked by sharp inequalities. The actual producers of wealth in society became the lowest group or class in society. A large portion of what they produced was taken by the rulers and ruling classes. This was a common feature of the social systems in all these civilizations. In fact, this is a common feature of all societies in which inequalities exist. However, the form of these inequalities varied from region to region. The form of exploitation, that is, the way the actual producers were deprived of a large portion of what they produced, also varied. In some civilizations, much of the productive work was carried on by slaves who were either prisoners taken during wars or people who failed to pay their debts. This was generally the case in the Greek and Roman civilizations. In India, the society was divided into castes. The rise of the cities, the impressive monuments and other works of art, the prosperity of the ruling classes, huge armies that the states maintained—all these were based on the exploitation of the actual producers who occupied a very low position in society. While the kings, the oligarchs and the upper classes lived in palatial houses in the midst of luxury, there was hardly any noticeable improvement in the living conditions of the mass of the population. In spite of all the improvements that took place in technology, most of the people continued to live in the same types of houses in which the people in Neolithic times lived. This is evident from the excavations of sites of these civilizations.

The most important change that the discovery and use of iron brought about was the spread of civilization. This became possible because many new areas of the world could now be brought under cultivation. The spread of civilization was accompanied by the rise of many more towns and cities. The rulers and the people belonging to upper classes lived in these towns and cities. These places were also centres of many crafts which grew with civilization. The spread of civilization also led to trade between different parts of the world and thus goods made in one place began to be exchanged for goods made in other place. Means of transport improved, especially shipping. The expansion of trade led to another development. Earlier, trade was carried on through the

exchange of goods or barter, as it is called. Now in many civilizations, money was introduced. This made the sale and purchase of goods much easier than before. The increasing use of money also showed that goods were now being produced not only for use by the local community but also for a bigger market.

While studying these civilizations it is important to remember that this period in human history saw a tremendous wave of migrations of peoples. Groups of people from different areas of the world came to new areas, settled down there and were assimilated into the pre-existing populations of those areas. Thus the composition of the population of almost every area was changed as a result of intermixing over a period of centuries. This also had a tremendous impact on the growth of civilization. Each group of people settling down in a new area brought with it its own traditions and knowledge and deeply influenced the culture of the country in which they settled down. The relations between different civilizations also grew and the mutual influence that these civilizations exercised on one another is a major aspect of the history of mankind. This happened through trade which expanded as a result of improvements in road and water transport and the growing needs of the economies of different civilizations. Wars also played an important part in the transmission of cultural achievements. The boundaries of states in those days were not fixed and territories changed hands frequently. The conquerors brought with them the knowledge and traditions of their civilizations to new areas. Thus most civilizations in this period developed as a result of intermingling of various peoples and traditions.

ANCIENT INDIAN CIVILIZATION

The Coming of the Aryans

In about 2000 B.C., migration of people who perhaps originally inhabited the Caspian Sea region, began to different parts of Europe and Asia. These people are called Indo-European speaking people as they spoke languages belonging to the Indo-European family of languages. They are also known as Aryans. A branch of these people, called Indo-Aryans, came to India around 1500 B.C. Their occupations were cattle-raising and agriculture and they had no experience with urban culture.

The Aryans lived in tribes and spoke Sanskrit which is a language of the Indo-European group. They worshipped the forces of nature—the god of rain and thunder (Indra), of wind (Varuna) and sun (Surya). These gods gave rain—so the people believed—ripened their crops, and helped to defeat enemies. Hymns in praise of these gods are found in the *Rigveda*.

Punjab was the first permanent home of the Aryans in India. The hymns of the *Rigveda* were composed here. From Punjab they moved eastward and spread all over the Gangetic valley and moved southward as far as the Vindhya mountains. Later, they went to other parts of India. They inter-married with the local inhabitants, and the Indian culture that began to develop was a mixture of elements of Vedic and pre-Vedic cultures.

When the Aryans settled in India, they were divided into a number of small tribes which fought with one another and with the earlier inhabitants. In course of time small states were formed which were ruled by kings or aristocracies. By the 6th century B.C., larger states, both kingdoms

and republics, developed. These were the sixteen Mahajanapadas. At this time the region of southern Bihar became very important and soon Magadha rose to a position of pre-eminence to build an empire. The Iranians invaded India during this period and there ensued close cultural and political contacts between the two areas.

The Period of Empires

A struggle for power began with the kings Bimbisara and Ajatasatru of the

Based upon Survey of India map with the permission of the Surveyor General of India.
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The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.

Asoka's Empire

kingdom of Magadha. In the 4th century B.C., the dynasty of the Nandas came to power. They had their capital at Pataliputra, the modern Patna. In the last quarter of the 4th century B.C., the Mauryan dynasty replaced the Nandas. This came about partly as a result of Alexander's invasion and the decline of Iranian strength in India. Chandragupta Maurya took advantage of the unsettled conditions and, with the help of his adviser, Kautilya, built the first great empire in India. Under Chandragupta Maurya and his two great successors, Bindusara and Asoka, almost the whole of India, with the exception of the farthest south, was unified into one empire. The former Greek territories of Aria, Archosia and the Paropamisadae in the north-west of India became part of the Mauryan empire when an invasion led by Seleucus failed.

Many important developments took place in the social, economic and cultural life of the Indian people in this period—322 to 184 B.C. Particularly important was the spread of Buddhism, which had arisen earlier.

The decline of the Mauryan empire after the rule of Asoka was followed by a long period of new invasions and the formation of small states. Of the foreign invasions, the first was that of the Greeks who were the rulers of Bactria. The Greeks were able to conquer Punjab and parts of Sind. The Greek contact had a lasting influence on the culture of India. One of its consequences was the development of the Gandhara style of art. The greatest Greek ruler in India was Menander (Milinda) in the 2nd century B.C., who became a Buddhist. The famous Buddhist work *Milindapanha*, consists of a dialogue between Menander and a Buddhist philosopher.

The Greek invasion was followed by that

of the Sakas. The Sakas, displaced the Greeks in Bactria and spread their power in western India. They also occupied Malwa. One of the Saka kings was Rudradaman who, as the name suggests, was a devotee of Siva. He was responsible for important irrigation works in Saurashtra. The Sakas, like other invaders, became a part of Indian life.

Another group of invaders from Central Asia was that of the Kushans early in the 1st century A.D. The greatest of the Kushan rulers was Kanishka who, according to some historians, started the Saka era in A.D. 78. Kanishka ruled his vast empire in India and Central Asia from Purushpur (modern Peshawar) for 40 years. Kanishka's empire brought to India the cultural traditions of Iran, Greece and Rome. It also provided a stimulus to trade between India and other parts of the world. Kanishka patronized the Mahayana form of Buddhism. It spread to Central Asia during this period and from there to China, Korea and Japan. The Kushan empire declined in the 3rd century.

In the third century B.C., there were three kingdoms in southern India. The Pandyas ruled over the southern-most and south-eastern parts of India from their capital at Madurai. The Cholas ruled over the Coromandel coast. The Cheras ruled over much of the present Kerala. The most important kingdom in the Deccan and Central India after the Mauryas was that of the Satavahanas. Locate these kingdoms in the map above. The Satavahana kingdom reached its zenith under Gautamiputra Satakarni (A.D. 106– A.D. 130) and declined in the third century. It fell when the Vakatakas emerged. However, the cultural traditions of the Satavahanas lived on through the Rashtrakutas, the Chalukyas and the Pallavas. The last rose to power in the third century with their capital at Kanchi. In Orissa, a strong kingdom had arisen in the first century B.C. under the rule of Kharavela.

In these kingdoms, there was a further development of the cultural unity of India. At the time these kingdoms flourished, there was nothing exclusively Aryan or Dravidian in their mores or cultural traits. Kanchi, for example, was an important seat of Sanskrit learning and of Buddhism and Jainism. The building and painting of the cave temples at Ajanta and Ellora began with the Satavahanas. These kingdoms also developed widespread trading contacts with the Roman empire, South-East Asia, West Asia and China, and foreign trade came to play an important part in the economic life of the people. The excavations at Arikamedu,the Roman trading post near Madras, have thrown much light on the Indo-Roman trade relations in ancient times. Trade with South-East Asian countries also led to many Indian settlements there, some of which played an important role in the political and cultural development of those countries.

When these developments were taking place in the south, north India was also undergoing important changes. Early in the 4th century Chandragupta I established the Gupta dynasty in Magadha. His son, Samudragupta, conquered almost the whole of northern India. He performed the *ashvamedha* sacrifice to assert his supremacy and carried his military expeditions into the south. His successor, Chandragupta II made more conquests, after which the Gupta empire declined. Although the Gupta empire was never as extensive as the Mauryan empire, ancient Indian culture reached its peak under the

Guptas. The Gupta empire, declined as a result of the Hun invasions in the 5th century. By the 6th century, it had fallen apart completely.

After the decline of the Gupta empire, India was again divided into a number of states, each struggling for supremacy. For a time, a large part of north India was united by Harsha, ruling from Thanesar, near Delhi, but he could not match the power of the Chalukyas further south. After the death of Harsha, many small Rajput states rose in the north. Although the period after the Guptas was one of many relatively weak states cultural progress continued.

Administration and Government in Ancient India

In the Vedic period, kingship was the most common form of government. The king was not an absolute ruler as the states were still tribal in character. He did not enjoy many privileges.

When the states became bigger, the powers of the king also increased, but did not become absolute. The king was regarded as the servant of the dharma which was a body of laws based on custom as well as tradition, supposedly of divine origin.

The political practices in India underwent many changes when the empires were formed. Most of the republics which were ruled by aristocracies were destroyed. The powers and privileges of the king increased and he was now the head of the government and directed the entire administrative machine. He himself appointed the highest officials. No checks were recognized to the king's authority. Meanwhile, the ideal of the *chakravartin* or universal emperor had also developed. It was not merely an ideal of conquest but also of rule according to dharma.

Under the Mauryas, almost all of India was directly ruled by one king. The provinces had governors who were usually princes of the royal family; a hierarchy of officials assisted the governor. The aim of administration was not merely efficient rule to maintain the empire but also social welfare. The ideal of kingship, as laid down in the *Arthashastra*, is that 'in the happiness of his subjects lies the happiness of the king and in their welfare, his welfare'. The Kushans, whose kingdom was fairly extensive, developed a system under which there were more or less independent divisions, making the kingdom a loose federation. The Kushan king bore the title 'Great King of Kings'. In the Satavahana kingdom centralizing elements of Mauryan administration were continued as these territories had been parts of the Mauryan empire. The Gupta administration was well organized through the provinces.

Though frequent changes in dynasties affected the administrative system at the top, the 'administration' of the village remained more or less the same. The village grew into autonomous units, with a headman and elders who had authority over law and order, public works, local disputes, and the collection of revenue for the state.

Social and Economic Conditions

The Aryans were a cattle-raising people when they came to India. Cattle was the primary form of wealth and even the value of a human being was measured in terms of it. Gradually, however, agriculture became an important occupation. In fact,

the Aryan arrival in the Gangetic valley was accompanied by the extension of agriculture in this area. Vast jungles were cleared. The use of iron made the land fit for cultivation.

Other occupations also developed along with agriculture. The carpenter had an esteemed place in the village life and economy. Metal-workers also became important. There were also potters, tanners, weavers and many other craftsmen. The growth of these occupations introduced a certain degree of specialization and led to the beginning of trade.

Around 600 B.C. many new towns developed around the centres of trade and industry. Some of these were Rajagriha, Champa, Kasi, Kausambi, Taxila, Bhrigukachcha and Vaisali. Trade grew with the West and with Central Asia as a result of the Iranian, Greek and other invasions. India's trade and cultural contacts with South-East Asia also increased. Many industries, such as textile, ivory and ironwork developed. Iron was not used in India until after the coming of the Aryans. Artisans producing specialized goods were organized into guilds called *shrenis*. These guilds, in course of time, became sub-castes. Later, trade relations between the Romans and the southern kingdoms grew.

After the decline of the Guptas and the disintegration of the western Roman empire, trade with Rome declined but increased with South-East Asian countries and with the east coast of Africa. In this period, however, there also grew the idea that travel to overseas lands led to pollution and should not be undertaken by those wishing to retain their caste purity. This idea must have caused some retardation in trade.

The most important feature of the Indian society since ancient times has been the caste system. It can be traced back to early Vedic times. When the Aryans came to India, they were divided into three main groups. These were the warriors, priests and all the rest of the people. It was possible then for members of the same family to follow different occupations. However, when the conquest of the indigenous inhabitants began, rigid social divisions were brought in. The Aryans divided themselves into the kshatriyas (warriors), the brahmans (priests), and the vaisyas (cultivators). The non-Aryan inhabitants of India whom the Aryans called *dasas* became the sudras. The sudras also included the offspring of the Aryan-dasa mixed marriages.

Of these castes, the kshatriyas and the brahmans enjoyed more or less the same status, though the position of the brahmans rose as the importance of rituals performed by them grew. Many vaisyas became landowners and traders instead of cultivators, the group that later consisted of sudras.

This division of society into castes was sanctified by the Vedic literature according to which the brahmans were born from the head of the creator, the kshatriyas from his arms, the vaisyas from his thighs, and the sudras from his feet. A later body of literature called the *Grihasutras* made the system even more rigid. The body of literature known as the *Dharmasastras* furthered the process of rigidity and inequality. Different laws were prescribed for different castes. Punishments for the same crime varied according to the caste of the criminal.

The *Dharmasastras* gave full spiritual sanctity to the caste system and provided very harsh treatment for the sudras.

However, in a some respects the system was still flexible. Marriage between the male of a higher caste and the female of a lower caste was permissible. After some time, even this flexibility disappeared. There was also another group of people who were outcastes. Fa-Hien, the Chinese traveller who came to India during the rule of the Guptas, mentions them. They lived in separate parts of villages and even their appearance in the presence of others was regarded a cause of pollution. Their condition was much worse than that of the sudras. Within the framework of the four castes, there were sub-castes within each caste. The sub-castes were also hereditary and were based on occupation. The sub-castes became very important in Hindu society as they determined occupation and marriage rules.

As a result of the rise of Jainism and Buddhism and the settlement of foreigners in India following invasions, the rigidity of the caste system became somewhat less severe. However, when the Turkish invasions began in the 10th century, a rigid caste system was prevailing in India. Changes took place after that, but the system started breaking up only in modern times.

The caste system, however, provided stability to ancient Indian society. It also made easy the absorption of new elements—both indigenous and foreign—into ancient Indian society by giving them a place in the caste hierarchy. It may be noted that the kind of naked oppression that was common in many ancient societies, as is evident from the prevalence of slavery, did not exist in India in ancient times.

Ancient Indian society was *patriarchal*, the eldest male being the head of the family. A son lived with his parents, wife and children. Monogamy was the general norm though ploygamy was permitted and kings and rich people had many wives. We also find references to the existence of polyandry, or women with many husbands. In the south, there were some matriarchal societies.

A man's life was governed by the *ashrama* system. It was divided into four *ashramas*: (i) *brahmacharya*, the period of study of the sacred texts under a teacher; (ii) *grahasthya*, the period of domestic married life; (iii) *vanaprastha*, a life of growing detachment and preparatory abnegation; and (iv) *sanyasa*, living away from the family, in self-denial and other worldly pursuits. This did not apply to the lower castes as they were prohibited from studying the sacred texts. For others, it was the rule; how many people followed it is difficult to say.

Women did not have the right to inherit property though in many respects their life was free. A widow could remarry, normally her husband's brother. In some respects the status of a woman was later reduced to that of a sudra. A male child was valued more than a female child.

Religion and Philosophy

A number of Indian religions and schools of philosophy developed in the ancient period. The religious beliefs of the Harappan culture and of other pre-Aryan inhabitants of India and those of the Aryans led to the development of a variety of beliefs and religious practices which are grouped together as Hinduism.

The religious beliefs and practices of the Aryans are described in the Vedas. The various natural phenomena were personified and worshipped as gods but there were no temples. To propitiate these

gods, the Aryans performed *yajna* or sacrifices. An elaborate system of rituals which were observed while performing *yajna* developed.

In this period different schools of philosophy also emerged. Of these, Vedanta, Mimamsa, Sankhya, Yoga, Nyaya and Vaiseshika became, in course of time, six distinct schools of Indian philosophy. The Vedanta school, which was based on a body of Vedic literature called the Upanishads greatly influenced the Indian thought for a long time. It dealt with many abstract ideas on the nature of the universe, the existence of soul, the relationship between individual and the universe, etc. Some of the schools of philosophy denied the existence of God.

Around 6th century B.C., new schools of thought arose. These were against the *yajna* and other ritualistic practices of the Vedic religion which by now lost its former simplicity. Of these schools, Jainism and Buddhism became very powerful and developed into major religions. They had a very important role in the development of Indian culture.

Jainism

Jainism, as we know it, was first preached by Vardhamana Mahavira who lived in the 6th century B.C. The Jains believe that Mahavira was the last of the Tirthankaras or great religious leaders who was preceded by 23 such leaders.

According to the Jains, every object, whether tree or stone or man or animal has a soul. That is why they lay great emphasis on *ahimsa* or non-injury and thus avoid hurting or killing any object.

Mahavira taught that Right Belief, Right Knowledge and Right Conduct are the means through which one can attain *moksha* or salvation.

The authority of the Vedas was denied by Mahavira who laid emphasis on good conduct and behaviour and did not prescribe rituals.

Later on, the Jains became divided into two sects: the Svetambaras (those dressed in white) and the Digambaras (sky-clad or naked).

Buddhism

In the sixth century B.C. another great religious leader, Gautama, the Buddha, the founder of Buddhism lived. His life has been widely famed in legend and literature and in painting and sculpture.

The Buddha taught four noble truths: (i) there is suffering in the world; (ii) this suffering has a cause; (iii) the cause is desire; (iv) it is possible to put an end to suffering if desire is removed. To attain *nirvana* or freedom from birth and rebirth and cessation of suffering, the Buddha said that one should know the "right way" for which he prescribed the eightfold path consisting of the Right View, Right Resolution, Right Words, Right Action, Right Living, Right Effort, Right Thinking and Right Concentration.

The Buddha also stressed the importance of the "middle path" and said that one should avoid the two extremes of strict asceticism and too much indulgence in worldly pleasures. Like Mahavira he also preached *ahimsa* but did not go as far as Mahavira.

The Buddha rejected the authority of the Vedas and social distinctions based on the caste system. Anybody could join the *sangha*.

The Buddhist *sangha* or the order of monks was a very disciplined and democratic organization. The monks and

nuns belonging to this order travelled all the year round preaching the Buddhist doctrines. Only during the rainy season they stayed in the *viharas* or monasteries.

The emperor Asoka helped to spread Buddhism widely in India and abroad. In course of time this religion spread to Sri Lanka, Burma, Western and Central Asia, Tibet and China and from there to Korea and Japan. Curiously Buddhism practically died out in the land of its birth. But Hinduism assimilated certain features of Buddhism.

Later on, the followers of the Buddha divided themselves into two sects, *Hinayana* (the Lesser Vehicle). and the *Mahayana* (the greater vehicle). The former school laid emphasis on the salvation of the individual by directly observing the eightfold path. The Mahayana school, on the other hand, started worshipping the Buddha as a god and stressed that salvation is open to all and not merely to monks and nuns. The worship of the images of the Buddha led to a great development of art in India and abroad.

Hinduism

By the time of the Guptas, the religious beliefs and practices had much changed from those of the Vedic time. The features which are characteristic of Hinduism, as we understand it now, had developed by this time. Its most important aspects were the idea of the trinity of gods, with Brahma, the Creator, Vishnu, the Preserver and Siva, the Destroyer. Most of the Hindus became devotees of Vishnu or of Siva. The idea of devotion or *bhakti* to God also originated around this time and the cult of Krishna, who was identified with Vishnu, started developing.

In certain areas the mother goddess whose worship had started from the Harappan times, continued to have devotees as well. This goddess was later worshipped as Shakti in different forms such as Uma, Bhavani, Annapurna, etc. in her benign mood or Kali, Karali, Chamundi, Chandi, etc. as the destroyer of the evil.

Hinduism teaches the existence of one Supreme Universal Spirit (*Ishwar* or *Parama Brahma*) but it allows the Hindu to worship Him in any form he likes. Thus Hinduism is henotheistic.

According to Hinduism the existence of each living thing is governed by its actions in previous lives. Good acts will bring fruit in some next existence and so will bad acts. This belief gave rise to the doctrines of *karma* and of re-birth. According to this belief, the soul within a body never dies. It is only the body that dies and is born again and again.

Hinduism considers *dharma* or virtue, *artha* or material well-being acquired in a righteous way and *kama* or gratification of the senses governed by a cultivated mind as the three main aims of human life. If one pursues these aims rightly one could attain *moksha* or salvation.

Another characteristic of Hinduism is *Varnashrama Dharma*. According to it one should observe the caste (varna) rules and abide by the functions prescribed for the different stages of life mentioned before. The four varnas and the four *ashramas* are however theoretical divisions of the society and idealised stages of life. The practical situations were much different.

Hinduism, however, has never been a uniform, stationary and unalterable religion. It has been able to adapt itself to the changing circumstances and conditions of life.

Hinduism with its varied doctrines,

principles, philosophies and rituals gave rise to many religious sects within itself. In course of time these sects developed their own ways of worshipping. But the members of each sect, while following their own system, maintained a respectful approach towards the views of others. Like Buddhism, some schools of Hinduism also spread outside India, particularly in the countries of South-East Asia.

The scriptures of Hinduism are many in number. The most important of these are the four Vedas—the *Rigveda*, the *Samaveda*, the *Yajurveda*, and the *Atharvaveda* —together with their *Brahmanas* and *Upanishads*.

The *Bhagawadgita* is also a very important scripture which synthesises three lines of thought on the way to achieve salvation through *Karma Marga*, by performing the prescribed sacrifices, rituals and duties of a householder, *Jnana Marga*, by acquiring knowledge and *Bhakti Marga*, by devotion to God. The influence of the epics— *Mahabharata* and *Ramayana* and the *Dharmasastras* and *Puranas* on the life of the Hindus is also notable. With all its sects, Hinduism became the most widespread religion in India.

Cultural Achievements of Ancient Indians

Ancient Indian civilization made great achievements in languages and literature, in acrhitecture and art, and in the field of science. India also maintained close cultural contacts with other parts of the world.

Languages and Literature — Most of the languages spoken in India today had their origin in ancient times. They belong to two main groups of languages—Indo-European and Dravidian.

The earliest literature in Sanskrit consisted of the *Vedas*, the *Brahmanas* and the *Upanishads*; these were learnt and transmitted orally. Sanskrit was the language of the early Aryans and it underwent a certain amount of change to become classical Sanskrit, more or less as we know it today. Simultaneously, there also grew up many languages which were known as Prakrits. They were much simpler in grammar and sound than Sanskrit. Pali, Magadhi, Sauraseni, were different forms of Prakrits spoken in different regions.

After the rise of Jainism and Buddhism, the position of Prakrit languages changed. The oral teachings of these religions were in Prakrit. Prakrit languages were used for administrative purposes under the Mauryas and in Asokan inscriptions. The seripts of the Asokan inscripitions were Brahmi and Kharosthi. For India, Brahmi script is the more important for it formed the basis of almost all Indian scripts. It was between the 4th century B.C. and the

3.1 Signs of the Brahmi script

4th century A.D. that the *Mahabharata* and the *Ramayana*, the great Indian epics, were composed from ballads or *gathas* of even greater antiquity. There were many additions to these epics before they got their present forms. In the south, around the beginning of the Christian era, the Sangam literature in Tamil inaugurated a period of great poetry and epics.

Sanskrit became fully developed and standardized when the great grammarian Panini developed his grammar, and it became the language of learning. While the educated men, brahmans and kshatriyas, spoke Sanskrit, women and common people spoke Sauraseni and other Prakrit dialects. Most of the Buddhist literature was in Pali, a Prakrit language, though later even Buddhist works were written in Sanskrit. The Brahmi script underwent many regional variations and laid the foundation of regional scripts. Besides stones, copper plates were used for inscriptions. The *talapatra* (palm leaf) and *bhojpatra* (birch bark) were used as writing materials. Paper was introduced later when the Arabs and the Turks came to India.

Beginning with the 2nd century A.D., great dramas were written in India. The most famous of the dramatists were Ashvaghosha, Bhasa, and Kalidasa who was also the greatest of India's poets. The writing of fables began with the stories of the *Panchatantra* which were soon translated into many foreign languages.

Art and Architecture—For over a thousand years after the collapse of the Harappan culture there was no progress in the art and architecture of India. In fact, the achievements of the Harappan people were completely forgotten. There were no planned houses and cities and there was almost no sculpture. Even the pottery in Vedic period lacked artistic merits.

3.2 Bull capital of Asokan Pillar at Kampurva

With the Mauryas, late in the 4th century B.C., beginnings were made in the field of art. Asoka's buildings, *stupas*, and the later *chaityas* or assembly halls and *viharas* or monasteries presaged the imminent flowering of Buddhist architecture. The capitals of Asoka's pillars, are notable specimens of contemporary sculpture. Later on the *stupas*, built to cover the relics of the Buddha or other holy men, became beautiful works of art. Their railings and gateways were decorated with fine pieces of sculpture. These depicted scenes from the Buddha's life and the *jataka* stories.

3.2(a) Back of the northern gateway of the Sanchi stupa

3.3 Boddhisattva from Gandhara

Chaityas were built in this second phase of Buddhist art by boring and caving into rocks, and the paintings on the Ajanta walls began to make their first appearance.

After the Mauryas, the Gandhara and Mathura schools of art developed. The influence of Greek and Roman sculpture is very much evident in the Gandhara school, while Mathura school, evolved an indigenous form. The two schools portrayed Buddhist subjects and particularly the figure of the Buddha. The Satavahanas also encouraged the building of *chaityas* and *stupas*. One of the most impressive *chaityas* is at Karli. A great *stupa* was built at Amaravati; although the *stupa* is destroyed, much of the Amaravati sculpture has survived.

The period of the Guptas was the greatest period for ancient Indian art. Painting flourished in the period of the Guptas and the frescoes of Ajanta and Bagh were created. The Hindu temple architecture, with its *garbha griha* or shrine room in which the image of the god was placed, began with the Guptas. The temple was made of stone and consisted of only one room where the image was placed. Later, independent temples were built in the south and the north. These followed the early Gupta temples, but were much larger and had more sculptures. The temples also received grants of land and acquired an important place in the economic life of the country.

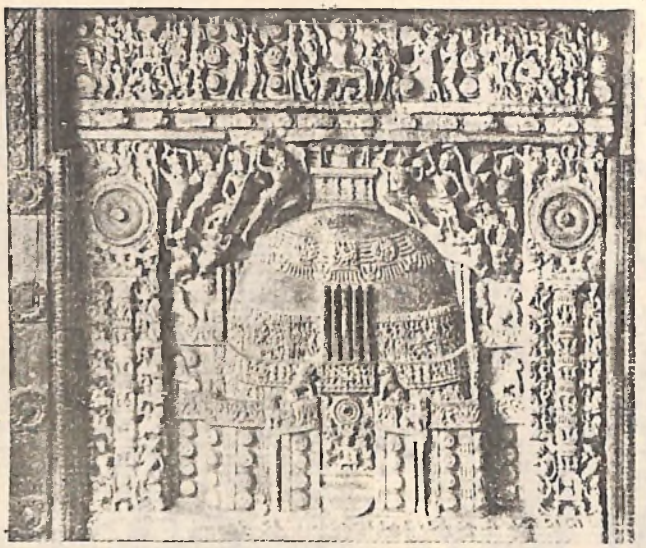
Development of Science—Many sastras or treatises were written on various branches of knowledge, such as medicine, astronomy, mathematics, grammar. The purpose of these *sastras* was to help in the proper performance of religious ceremonies but they laid the foundation of sciences.

In various schools of thought in ancient India, the universe has been classified into four or five elements—earth, air, fire, water and ether. These schools also propounded that the elements were made of atoms *(anu)* and the manner of combination of atoms within an element determined its characters. These theories were, however, not based on experiments, but on intuition and logic.

The need to calculate auspicious days and hours for sacrifice led to some knowledge of astronomy. Many important works came more than a thousand years later. These works contained knowledge of an exact method for determining the

3.4 The Buddha from Mathura

length of a day and for forecasting eclipses. Two outstanding astronomers of ancient India were Aryabhata and Varahamihira. The science of the zodiac was also developed, and trigonometry was applied to the study of astronomy.



3.5 Amaravati *stupa*

References to mathematics are contained in the Vedic literature. The need to construct Vedic altars laid the foundations of geometry. Gradually the knowledge of mathematics grew and some very important contributions were made—a decimal system of numerals, positional arithmetic and knowledge of zero (though it was not named as such). The body of works known as the *sulvasutras* or treatises on the construction of an altar for Vedic sacrifice contain information which presumes knowledge of the Pythagoras theorem and the doubling of squares. Mathematicians were able to calculate almost correctly, the value of the square root of 2. Centuries before the Guptas, Indian mathematics had been divided into two branches, *patiganita* (arithmetic) and *bijaganita* (algebra). Decimal notation and positional digits were used everywhere. The zero digit appeared and was called *bindu*.

The making of sacrifices added to the Indian's knowledge of anatomy. The *Atharvaveda* is rich in information about symptoms and diseases though not precisely related to each other, and about treatment of diseases with herbs, water, and magical *mantras*. There are references in Greek literature of that time to Indian remedies and medical formulae. Indian medicine appears to have greatly influenced Greek medicine.

Indian medicine reached a very high level during the Gupta times. The two great names in Indian medicine are *Susruta* and *Charaka*. The Ayurvedic medicine, still widely used in India, was fully developed in this period. The system laid great stress on hygiene and food. The knowledge of surgery was also fairly

3.6 Boodhisattva from Ajanta

advanced and many difficult operations were performed. The knowledge of chemistry also grew as a result of interest in alchemy. From the iron pillar at Delhi and references to the Indian swords valued abroad, it is evident that the knowledge of metallurgy had attained proficiency in ancient India.

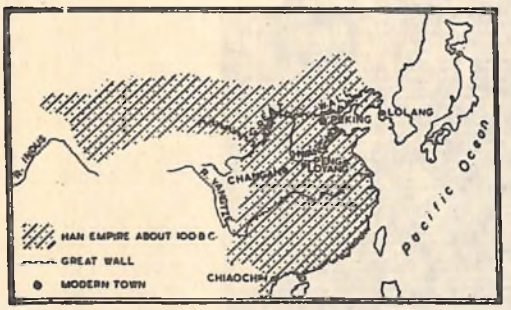
The culture of ancient India was burgeoning in all fields—government, economics, literature, art and science.

THE CIVILIZATION OF ANCIENT CHINA

Political Developments

After the Chous defeated the Shang rulers they conquered hundreds of small city-states. By the 8th century B.C. the city-states had been joined together to make only twelve. Though these states gave their allegiance to the central Chou government at Loyang, they were, for the most part, independent and were at war with one another. By the 7th century B.C. the central Chou state had become a puppet in the hands of the more powerful warring states. Continuous attacks by nomadic peoples from the surrounding areas added to the confusion in China for centuries.

By the 3rd century B.C. there were three



The Han Empire

major Chinese states—Chin, Chu and Chi. In 221 B.C. the state of Chin became dominant and the Chin ruler assumed the title of emperor over all three states. Then he extended his conquests over a major area to the south. With his rule began a period of ordered growth, progress and prosperity in Chinese civilization. He built roads in every direction to help army movements. To keep out invaders from the north, he began construction of a wall known as the Great Wall. He unified coinage, introduced regulations regarding weights and measures and standardized the Chinese script.

The Han dynasty followed the Chin dynasty in 202 B.C. and the Han emperors ruled China for almost 400 years. The Han rule brought great advances. Such great achievements were made in so many walks of life that many Chinese, for centuries afterwards, proudly called themselves 'Sons of Han'. Then followed a period of civil war and confusion. The Huns and Tartars invaded the empire and established settlements. It was almost after four centuries of anarchy that China again became united. This was accomplished in A.D. 589 by the Sui dynasty.

Social Organization and Administration

Society in ancient China was stratified with the state overlords or the emperor at the top. Below the ruler were five main classes—the literary or intellectual class, merchants, artisans, cultivators and slaves. The most respected in ancient China, as in India, were the intellectuals or literary men. But whereas the brahmans in India were born to their high position, in China the 'top' could, in theory, be reached by anyone through education. This was in theory rather than a fact; social equality never existed. Education was too expensive for most outside of the landed aristocracy, and the division of society into classes was fixed.

Soldiers occupied a low place in Chinese society at this time, and armies were often composed of people of 'doubtful' character. The emperor of China encouraged invading barbarians to join his army. Prisoners of war also sometimes became soldiers though they were usually enslaved and put to work on building roads or other constructions.

The government in ancient China was run by the lords of the states or the emperors. The emperors' power was absolute though they had an advisory council and ministers, chosen from the aristocracy.

The political philosophy and practices of the Han rulers were greatly influenced by the teachings of Confucius who lived and taught about 500 B.C. In fact, the name of Confucius is inseparable from any study of the Chinese civilization since his time. His teachings formed the basis of a religion called Confucianism. But he was more a philosopher-statesman than a religious leader. He advocated a system of rule based on high moral principles that

would promote peace and welfare. He studied the ills of society that existed during his time and believed that a strong central government was necessary to make and enforce laws to improve the condition of life for the man. He put many of his ideas into practice when he was a minister and adviser to rulers.

The Han rulers revived Confucianism and Confucius' ideas of training talented young men for public offices. Then, to qualify for appointment, the young men had to pass through an elaborate system of examination before they were chosen. Such 'scholar-officials' came to be known as *mandarins*.They became a new ruling class under the Hans and continued to be dominant in Chinese life right into the 20th century. In practice, many *mandarins* wandered far from the ideals of Confucius. However, the Chinese was the first civilization in history to have a system of selecting public officials on the basis of education and competitive examination.

Economic Life in Ancient China

Agriculture, of course, continued to be the basis of the Chinese economic life. The plough began to replace the digging fork and improvements were made in flood control and irrigation. One of the responsibilities of the government was to co-ordinate and direct the activities of the great number of agricultural workers and to regulate the use of water. The Hwang-Ho, as you know, was notorious for its floods and various schemes were devised to store and use the water. The removal of silt after floods was also a government concern, along with the digging of canals.

The growing of silkworms and the spinning and weaving of silk combined agriculture and industry. Under the Hans, silk was a principal item of export.

Improvements in pottery-making continued and it was soon to develop into a distinct Chinese art. Other crafts included gold and silver work and the carving of jade which was another speciality of the Chinese. Jade was called 'the sound stone'. When properly cut and struck, it gave a musical tone. Lacquer, the natural product of a tree, was also used in making articles of beauty and utility. The casting of bronze boxes worked with lacquer was perfected. Many varieties of bronzes were produced. Bronze mirrors, decorated with geometrical designs, were exquisite objects.

With the establishment of stable government trade increased. Towns developed into commercial centres. Two main roads were built across the Great Wall to carry on trade with the West. Caravan routes to Roman frontiers were guarded to protect transport of merchandise. Trade with the Romans across the steppes of Central Asia flourished. The Chinese sold iron goods, silk, pottery, and other handicrafts and got silver and gold in return. Copper coins were used in business transactions.

Chinese Religions and Philosophy

The two major religions of ancient China are Taoism and Confucianism. The teachings of two great Chinese philosophers, Lao-tse and Confucius, are associated with Taoism and Confucianism.

Lao-tse, which means the 'Older Master', is said to have been born in 604 B.C. He is said to have written a short book, *Tao te King*, which contains the essence of Taoism. Tao means 'the way', the central principle of the universe.

Taoism preaches the virtues of a simple life and the denial of selfishness.

Confucius, or King Futse, as the Chinese call him, was born into an aristocratic family and lived from 551 to 479 B.C. He was thus a contemporary of Mahavira and the Buddha. Throughout his life he was primarily concerned with government, the best way to rule over a state and the people. He taught rules of conduct for society and stressed relationships between man and man. He did not say much of the gods or of death, but emphasized right conduct suited to particular occasions. He constantly asked his pupils to revere the customs of the past. Respect for elders and ancestors—the solidarity of the family—was a central point in his teachings.

While Lao-tse was more concerned with the individual, Confucius thought more in terms of society. Confucius emphasized moral and social order for society. He thus laid great emphasis on social morality. To him, 'Five Relationships' were important: between ruler and subject, father and son, husband and wife, older brother and younger brother and older friend and younger friend. In course of time, Confucianism became rigid, formal and conservative. Taoism which had originally preached enlightenment and inner joy for the individual, got lost in magical practices.

Buddhism was brought into China by Indian and Indonesian traders and missionaries during the Han rule. In time, Buddhism came to have a great influence on cultural life. The millions of Buddhists in China were mainly of the Mahayana sect.

Achievements of Ancient China

Architecture—With the establishment of stable government, palaces and pagodas were constructed in the capital cities of ancient China. The Great Wall is a mighty

3.7 A part of the 2400 km long Great Wall of China

monument to the building skill of ancient China. This wall, built of stone and earth to a height of 6 metres and extending over 2400 kilometres of hills and valleys, links the east coast with the mountains of the west right across northern China. The wall was wide enough for a carriage to go through. At intervals of every few hundred metres were located watch-towers for warriors. Such a large, sturdy construction must have taken decades and an army of labourers to complete it.

Painting—Painting in China was a branch of calligraphy, and the brush that was used for writing was also used for painting. Many pictures were scrolls that could be rolled up and preserved. The emphasis was on conveying moods and suggesting ideas through perfect forms. There was, therefore, very little fidelity to real objects and we can say that the

Chinese paintings aimed at suggesting rather than describing. Although such objects as the lotus, dragon and horse were popular motifs of art, the stress was on beauty.

Language and Literature—The Chinese script was standardized by the Chin ruler and an official list of 3300 characters was compiled. With the political unification of China, this script was adopted all over the country. In the course of centuries, many new characters were added and the script became more artistic. Though the script was the same throughout the country, there were differences in the spoken languages. The Chinese script played an important part in the cultural unification of China. The Chinese script spread to other countries also. It influenced the Japanese, Korean and Vietnamese scripts.

In the early times the writing material used by the Chinese was bone. Later silk was used as a material for writing on with a brush of camel hair. It was the use of brush that helped make the writing so artistic. In the 1st century A.D., paper was invented and this brought about a great revolution in writing. Paper was made from the bark of trees, bamboo, and rags. The invention of paper brought the knowledge and use of writing to more people because paper was cheaper than silk to write on. The invention of paper and its importance in spreading knowledge within and outside China makes it one of the great contributions of China to the world.

The growth of the Chinese script and language and of writing materials led to the writing of a very rich literature and its preservation for posterity. Besides classical literature, the philosophers wrote beautiful prose in the language of the people. The Chou rulers were patrons of poetry. Later, beautiful elegies were written. Under the Hans, an ornate style of poetry, describing gardens and palaces, developed.

Some of the first historical works in the world were written in China. The *Annals*, which is said to have been written by Confucius, is the history of the state of Lu from 722 to 481 B.C. Later the art of historical writing was further developed and lively accounts of the life of the people were written. Each dynasty compiled its own history. The tradition of histories of dynasties became so strong that 26 dynastic histories covering China's entire history up to 1912 have come down to us. The pattern of these histories was set by Ssu-ma Chien, who probably lived in the 1st or 2nd century B.C., and is commonly remembered as the Herodotus of China. The histories contain information about the events in the court, the genealogies of emperors and tables of officials, the lives of important persons and a vast amount of information on various subjects, such as administration, geography, astronomy, and music.

Science and Technology—One of the greatest achievements of the Chinese in engineering was the building of canals. These canals were used for navigation as well as for irrigation. Some of these were more than a hundred kilometres long.

The Chinese made several contributions to science. They compiled lists of stars and constellations and could explain many astronomical phenomena like the eclipse. They knew the causes of eclipses and could accurately predict them. By the 2nd century A.D., many Chinese astronomers believed that the sun, moon and all the stars float freely in empty space. In the 4th and 5th centuries A.D., maps showing the position of various

stars were made. The water clock too was invented. The problem of floods impelled the Chinese to study rains, clouds, and seasons.

In mathematics the Chinese used the decimal system. Zero, however, was unknown to them for a long time. The Chinese numerical system was multiplicative; that is, to write 300 they would write the characters for 100 and 3. The Romans wrote 300 by repeating the sign for 100 (C) three times (CCC). The abacus was invented in China and was used for calculations in business. Long before the Europeans, the Chinese had more or less accurately calculated the value of π (pronounced 'pi').

The Chinese wrote accounts of travel that contained information about the geography of other countries. But they thought that the earth was a square surrounded by sea on all sides. Like many other peoples, they considered their own country to be the centre of the earth. A very important Chinese contribution was made in *seismology*, the science of earthquakes. In the 2nd century A.D., they invented a seismograph. With the help of this instrument, the Chinese calculated the epicentre or the exact place where the earthquake began.

3.8 An ancient Chinese seismograph

The Chinese had a fair knowledge of human anatomy. They knew about a number of diseases and their remedies. They could distinguish between various infectious diseases and knew the symptoms of each. The relationship between health and diet was also known to them. They did not believe in priestly incantations to cure diseases.

It is interesting to know that the kite was an ancient Chinese toy and that the Chinese invented the umbrella.

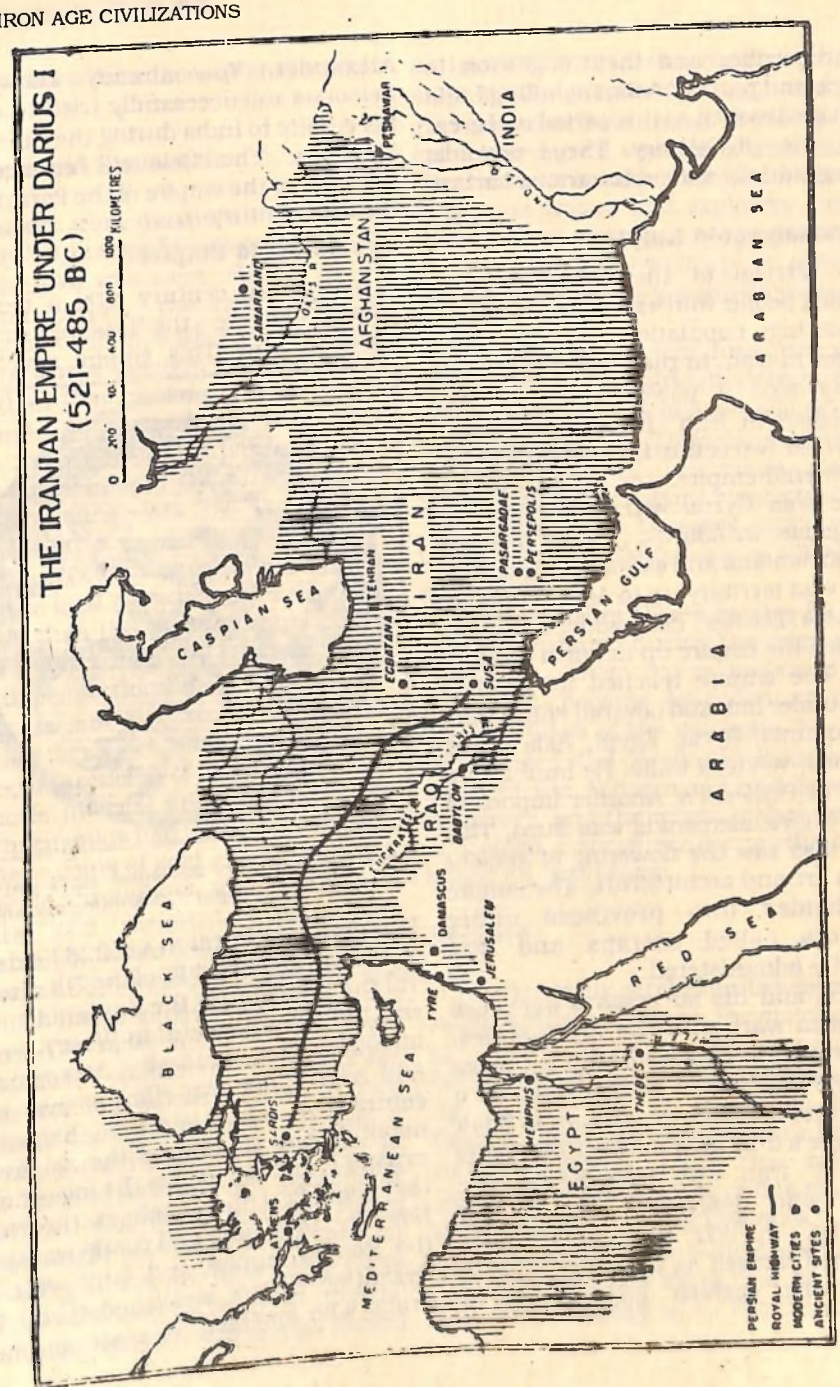
Most of the developments and inventions of the Chinese civilization were slow in reaching the outside world. For example, several centuries after the Chinese made paper, the Arabs learned the art and passed it on to Europe.

THE IRANIAN CIVILIZATION

Early History

Even though settled life in Iran began almost at the same time as in the neighbouring Mesopotamia, the growth of culture there was rather slow. Iran served as the connecting link between the Indus Valley and southern Mesopotamia as well as the transit route for the movement of tribes from Central Asia and the region around the Caspian Sea.

During the second millennium B.C. the eastern branch of the Indo-European-speaking peoples came to Iran. They were



The Iranian Empire under Darius I

nomadic tribes and their migration to Europe and parts of Asia, including India mentioned earlier, in this period is of great importance in history. These nomadic tribes gradually spread to various parts of Iran.

The Achaemenid Empire

The arrival of the Indo-European-speaking people who were absorbed in the pre-existing population led to many changes in Iran. In the middle of the 6th century B.C., a powerful empire was established in Iran. This empire which lasted over two centuries is known as the Achaemenid empire. The founder of this empire was Cyrus with his capital at Pasargadae. In 539 B.C., Cyrus defeated the Babylonians and extended his empire over a vast territory up to Asia Minor. His successor, Darius I (522-486 B.C.), further extended the empire up to north-western India. The empire reached its greatest extent under him and covered entire Iran, Mesopotamia, Syria, Egypt, Asia Minor and north-western India. He built a new capital at Persepolis. Another important city of the Achaemenids was Susa. This period also saw the flowering of ancient Iranian art and architecture. The empire was divided into provinces under governors called satraps and was efficiently administered.

Darius and his successors were also involved in wars with the Greek states. However, they were defeated by the Greeks and the Achaemenid empire was, as a consequence, weakened. Alexander dealt the empire a final blow during the reign of Darius III. Iran was occupied by the Greeks, who destroyed the city of Persepolis. In 301 B.C., Seleucus I established himself as the ruler of a large part of the eastern possessions of Alexander. You already know that Seleucus unsuccessfully tried to extend his empire to India during the time of the Mauryas. The Seleucid empire was followed by the empire of the Parthians in the 2nd century B.C.

The Sassanid Empire

In the 3rd century A.D., a new and powerful empire– the Sassanid empire– arose in Iran. This empire which was

3.9 A fourth century Sassanian silver plate. The Sassanian King, Shapur II, is hunting wild animals.

founded by Ardashir in A.D. 226 held sway in Iran up to the middle of the 7th century. Till the 5th century the Sassanid empire was the most powerful in West Asia and included Transcaucasia, Mesopotamia and Asia Minor. An efficient system of centralized administration helped to maintain the stability of the empire, to expand it and to repulse the invasions of the nomadic tribes such as the Huns. However, their long and costly wars with the Roman empire and later with the Byzantine empire weakened them. The Arabs who emerged as a strong power

after the rise of Islam, conquered Iran in A.D. 651.

Economic and Social Life

In ancient Iran, most of the land was owned by kings, their friends and relatives and noblemen who were officials of the state and temples. The vast estates of these land owners were worked on by peasants whose position was not much better than that of serfs. The landlords also employed slaves for work on their estates. Most of the slaves were prisoners of war who were captured by Iran's armies during the many wars that they waged. The condition of peasants was generally miserable. In certain areas the peasants owned the land and they were therefore better off than those who worked on the estates of the landlords.

The upper sections of society were very prosperous and led lives of luxury. An important factor behind the prosperity of the upper sections of society was the large-scale internal and external trade. The Achaemenids had introduced the use of money—coins of gold and silver—on a large scale throughout the empire. The weights and measures were also standardized. A marvellous network of roads was built by the Achaemenids, and it was the finest in the world before the Romans. The most famous of the roads built by them connected Susa near the Persian Gulf with Sardis in Asia Minor—a distance of 2500 kilometres. This road is called the Royal Road. Road-building on such a large scale was made possible by an efficient system of taxation which provided ample resources to the state for undertaking this work. As a result there was a tremendous increase in internal trade throughout the vast empire as well as in trade with southern Europe. The ship building industry facilitated the growth of maritime trade. The kings also encouraged great voyages of exploration. Iran in ancient times produced a number of famous sailors and explorers. One of them, Scylax, undertook a voyage from the mouth of the Indus to Egypt on orders of Darius. This voyage lasted two years and a half.

The kings of ancient Iran took great pains in expanding agriculture by building subterranean canals in areas where water was in short supply. They also encouraged the cultivation of new crops. Certain technological innovations were introduced like the water-mill. Breeding of silk-worms was started on a large scale as silk was in great demand.

The ownership of vast estates by a few people continued during the reign of the Sassanids. Their power increased and even kings became dependent on them. The condition of the peasants, however, deteriorated. The dazzling splendour of the court of the Achaemenid and Sassanid emperors, and the might of their armies concealed a social structure which was based on oppression.

Religion

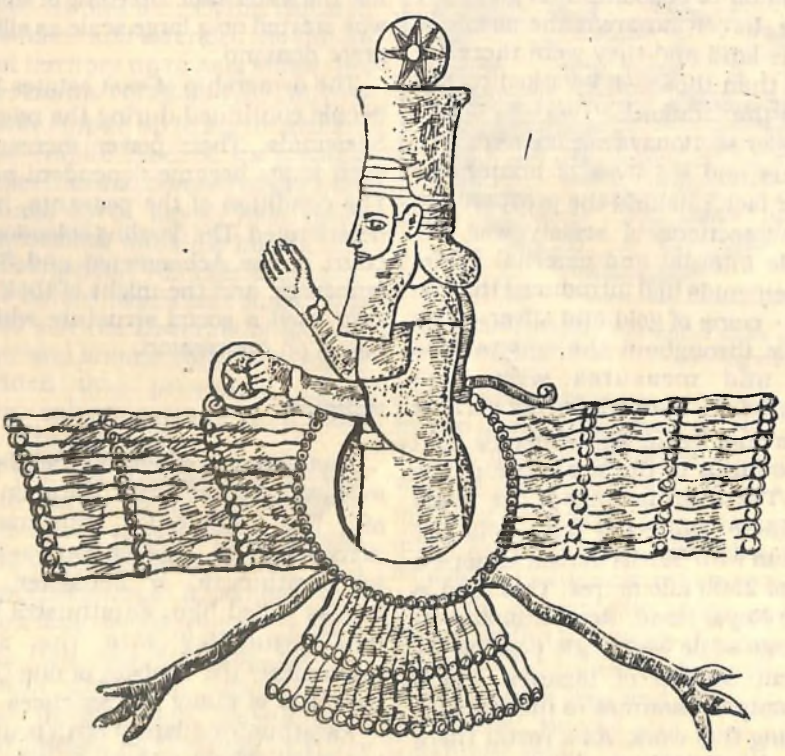
A wide variety of religious beliefs existed in ancient Iran. However, the main religion of the ancient Iranians was Zoroastrianism. This religion was founded by Zarathustra, or Zoroaster, as the Greeks called him. Zarathustra brought new principles into the religion, particularly the concept of one God, and purged it of many evil practices.

Zarathustra's date of birth is uncertain but most scholars think that he lived in the 7th century B.C. His ideas and

teachings are recorded in the *Zend*, the holy book of the Parsis. Zarathustra said that the world consists of two forces, good and evil. The universe and all life represent a struggle between good and evil, light and darkness. The god, Ahura Mazda, represents the forces of good, and Ahriman, the forces of evil. The struggle that is constantly going on between Ahura Mazda and Ahriman would eventually be decided in favour of the former and the world would then become a righteous world. Man, however, is not a passive spectator in this struggle. He must cultivate a number of virtues to be an active fighter on behalf of Ahura Mazda. The sun and fire came to be worshipped as visible symbols of Ahura Mazda, who represents light.

The ancient Iranians also had a number of minor gods— Indra, Vayu, Mithru, Naon Raithya and Verethraghna—who can easily be identified with the Vedic gods. This similarity is due to the fact that the ancient Iranians and the Vedic Aryans came from a common stock of Indo-European-speaking people and the Vedic Aryans came to India through Iran. These two peoples naturally had a number of common gods.

Both Judaism and Christianity are indebted to Zoroastrianism. The concept

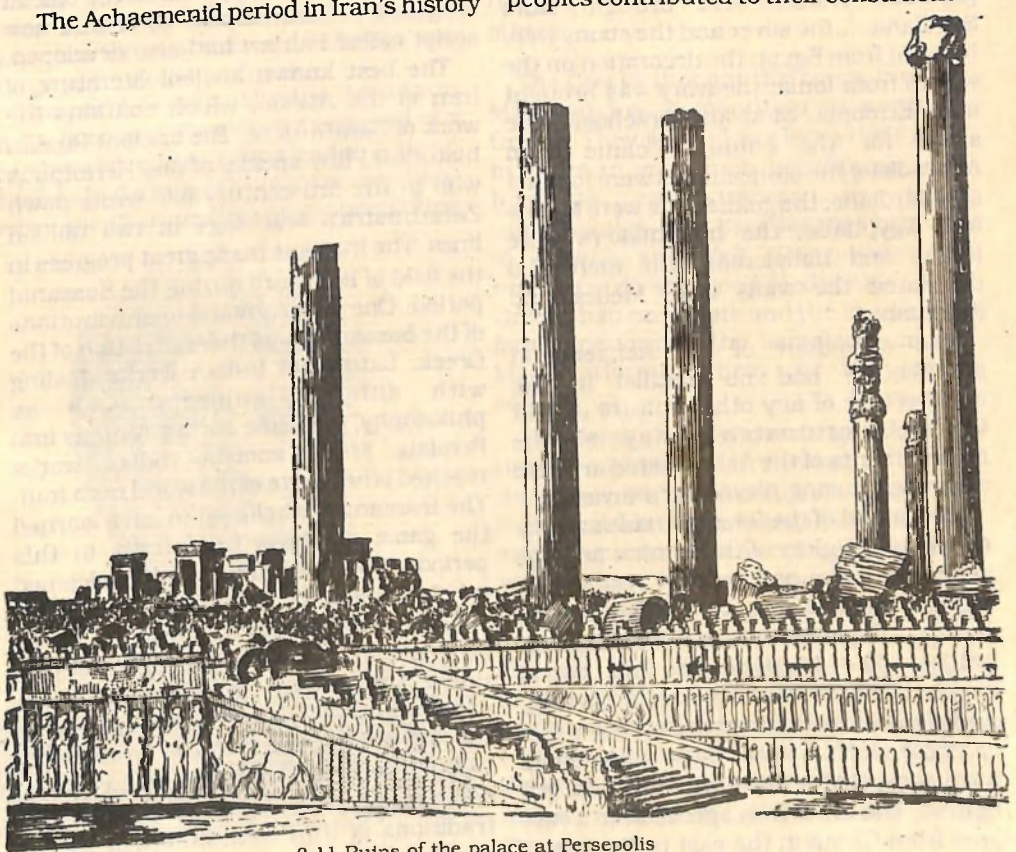


3.10 The symbol of Ahura Mazda carved above the head of King Darius

of Satan in the Jewish religion and the story of the Wise Men in the Bible also owe their origin to the writings of Zoroaster. Some other ideas in Christianity also seem to have have come from Zoroastrianism; for instance, the resurrection of the dead, the final triumph over the devil, and the Last Judgement when the good are separated from the evil and justice is done. The Parsis in India are the followers of Zoroastrianism.

Art and Culture

The Achaemenid period in Iran's history is notable for its architectural splendour as seen in the monumental buildings in the cities of Susa, Pasargadae and persepolis. Zoroastrianism was a simple religion and did not require huge temples. Therefore, most of the Achaemenid architecture was secular in character. The palaces of the Achaemenid emperors were built with great care and were intended to dazzle the visitors with their pomp and splendour. The artists and the materials for the palaces were drawn from every part of the empire and the artistic traditions of many different peoples contributed to their construction.



3.11 Ruins of the palace at Persepolis

An interesting inscription of the great emperor Darius I has been discovered from his palace at Susa, which relates how the palace was constructed, and gives us some idea of the beautiful architecture of the Achaemenids. The inscription reads: "The Babylonians worked at excavating the site, covering it with gravel, and manufacturing sun-dried bricks; the cedar timber was brought from Lebanon by the Assyrians, the Carians and the Ionians; the oakwood was brought from Gandhara and from Carmania; the gold was brought from Sardis and Bactria...the precious stones were brought from Sogdiana.....the silver and the ebony were brought from Egypt; the decoration on the wall is from Ionia; the ivory was brought from Ethiopia, Sind and Arachosia; the stone for the columns came from Aphrodisia; the stonecutters were Ionians and Sardians; the goldsmiths were Medes and Egyptians; the brickmakers were Ionian and Babylonian; the men who decorated the walls were Medes and Egyptians."

The splendour of the Achaemenid architecture had no parallel in the architecture of any other culture of that time. Unfortunately many of the achievements of the Achaemenid art were destroyed during Alexander's invasion.

The period of the Sassanid rule saw the revival of the glory of the Iranian art. The art of bas-relief, particularly, reached its highest point under the Sassanids. The relief art depicted scenes of hunting and battles. The Iranians in this period excelled in gem-cutting, metal carving, and glass-moulding and in the weaving of valuable cloth. Plates, cups and bottles were decorated with human and animal figures. The art of Iran spread over a vast area from China in the east to Europe in the west. The art and architecture of medieval Europe was particularly influenced by the ancient Iranian art and architecture.

Language and literature also made great progress during the ancient times in Iran. During the Achaemenid empire, while the official language was Aramaic, old Persian also was widely used. Aramaic was used over a very wide area of Asia and its script influenced the scripts of many Asian languages. Old Persian also was written in Aramaic script. The Sassanids revived old Persian and made it the official language of their empire. By then a new script called Pahlavi had also developed.

The best known ancient literature of Iran is the *Avesta*, which contains the work of Zarathustra. The ancient Roman historian Pliny speaks of one Hermippus who in the 3rd century B.C. wrote down Zarathustra's teachings in two million lines. The Iranians made great progress in the field of literature during the Sassanid period. One of the greatest contributions of the Sassanids was the translation of the Greek, Latin and Indian works dealing with different subjects such as philosophy, medicine and astronomy into Persian. Many ancient Indian works reached other parts of the world from Iran. The Iranians are believed to have learned the game of chess from India in this period. The Sassanid rulers welcomed scholars from different countries. Because of their religious toleration many Greek scholars who had suffered persecution under the church in Greece found a shelter in Iran. The broad-mindedness of the rulers of Iran led to the flowering of their culture and there began a cultural renaissance in Iran. The cultural traditions of Iran were inherited by the Arabs who occupied Iran in the 7th

century. The Arabs transmitted the cultural achievements of ancient Iran to other parts of the world.

THE GREEK CIVILIZATION

Early Greeks

The Greeks came to the region of the Aegean sea from the north, probably from the Danube river valley. They spoke an Indo-European language. Each group that came into the Aegean region had its own name—Achaeans, Ionians and Dorians. Soon all began to call themselves *Hellenes*, whcih means Greeks. So various forms of the word 'Hellenes' are often used instead of Greek.

The early Greeks, like the Aryans in India, lived in tribes, each composed of a number of families under a leader. A group of tribes had a king. The main occupations were agriculture and herding, and making of pottery, swords and ornaments. Trade was mainly by bartering. Fighting, adventure, and conquest were 'the spice of life'.

3.12 Greek god Zeus

The religious beliefs of the early Greeks were very simple. They had many gods whom they imagined to be like human beings, though more powerful and immortal. Zeus was the god of the sky and hence caused thunder. Poseidon, god of the sea, raised storms that sank ships. Apollo, the sun god, could reveal the future. Athena was the goddess of victory and patroness of the arts. Dionysus was the god of wine—and there were many others.

The Greeks thought their gods lived on Mt. Olympus, a mountain in northern Greece. They wanted to please their gods in order to gain such benefits as good harvests or success in their undertakings—not because they believed in Heaven and Hell. Their gods had nothing to do with good deeds or sins. The Greeks had no priests and the head of the family performed the sacrifices—or the king performed them for the entire community.

The Greeks had no knowledge of writing until around 800 B.C., but the stories of their life were passed on in folk-songs and ballads in which they sang of their heroes and conquests. When writing developed, poets began to record the stories. Two poems, credited to a poet named Homer, provide a great deal of information about the life and institutions of the early Greeks. The *Iliad* is the story of the siege and destruction of the city of Troy, on the western coast of Asia Minor. The *Odyssey* describes the adventures and return home, from Troy, of a Greek hero, Odysseus.

Rise of City-States

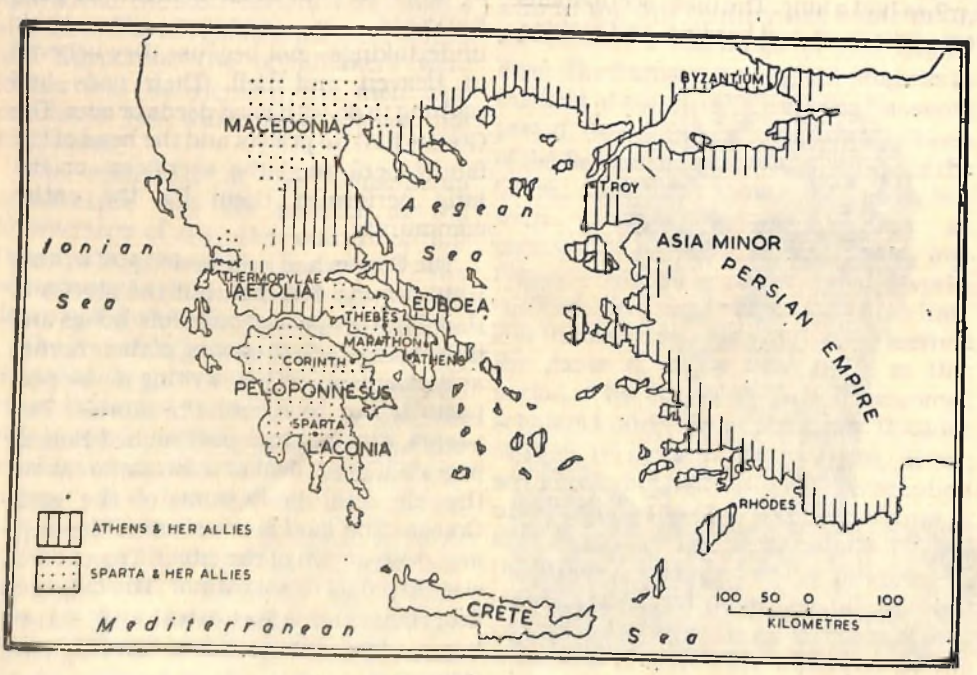
Around 800 B.C., groups of Greek villages began joining into larger units to form city states. At the highest point in a city-state, an *acropolis* or citadel was built for defence and the city spread out around the acropolis. Many such cities grew up all over Greece and on a number of islands—Sparta, Athens, Macedonia, Corinth, Thebes and others.

At first, the city-states were ruled by monarchs. Then wealthy landowners took over political power and abolished the monarchy. The population of the cities increased. Commerce and industry expanded and a rich middle class developed in the cities. This class joined with the poor farmers to lessen the power of the landowners. This conflict resulted in the rise of dictators, or *tyrants*, as the Greeks called them. In course of time, the dictatorships also were overthrown, and most of the states established either a kind of democracy, or an *oligarchy*—rule by a few rich men.

The city-states had many common features, but each had its own character. There were clashes amongst them but, due to difficulties of travel and communication, they could not be unified in a single state. The two most important city-states on the mainland were Sparta and Athens.

The State of Sparta

Sparta was different from most of the other Greek city-states—in part because of its geographical location and the



Greece in the Age of Pericles